Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	EB Docket No. 06-119
Recommendations of the Independent Panel	)	
Reviewing the Impact of Hurricane Katrina on	)	[FCC 06-83 (NPRM)]
Communications Networks	)	
	)	

Comments of J. Kevin Hunt, Esq. (WA7VTD)
or, in the alternative,
Petition for Rulemaking submitted by J. Kevin Hunt, Esq. (WA7VTD),
on behalf of himself and Oregon City Disaster Services ("OCDS")

Filed: August 3, 2006 — VIA ECFS

INDEX **Page**

INDEX (con't)

I.

Prefatory Information

In this proceeding, the Commission seeks comments on what actions the Commission can take to address the *Recommendations of the Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks*.

These *Comments* address three important actions FCC can – *and emphatically should – immediately undertake* in order to mitigate substantial loss of life and other sequelae of *Katrina*-like disasters. These three actions are all revenue-neutral and would, if properly implemented, result in immensely improved inter-agency communications interoperability, with resulting preservation of life and property, reduction of inefficient and redundant tactical operations, and increased economy in delivery of government and private disaster relief resources.

The first enumerated proposed Commission action requires no rulemaking; the second two proposed FCC actions specifically request that amendments to 47 CFR Part 97 be adopted. Of the two requests for rules amendments, the first supplies proposed language supplanting that currently codified at § 97.407. The second request for rules amendments recommends substantive changes to subpart F, but does not supply proposed supplanting or amendatory language.

These three proposals are tendered specifically in response to paragraph 9, page 4, Section III of the Commission's *Notice of Proposed Rulemaking*, EB No. 06-119, FCC 06-083 (NPRM) released June 19, 2006, to-wit (emphasis added):

> 9. "...We seek comment... *on other steps we can take within our jurisdiction and statutory authority* to assist

> the public safety community response to disasters and other emergencies. *** *Are there other areas where regulatory relief would be appropriate*? *** Finally, *we invite comment on other steps beyond those recommended by the panel that we could take within our statutory authority and jurisdiction to improve or strengthen network resiliency and reliability.*

To the extent, however, that either of the last two of the three enumerated recommendations contained herein is deemed outside the scope of this proceeding or otherwise not cognizable therein for any reason, the undersigned alternatively hereby respectfully requests that these *Comments* be deemed a *Petition for Rulemaking* with regard thereto.

II.

Introduction: Accurately Identifying a Problem and its Solutions

The two substantive rulemaking proposals contained herein are proposed because the three under consideration for the Amateur Service – waiving filing deadlines for renewal of amateur service licenses, permitting transmissions necessary to meet essential communications needs, and expediting approval of application for, or automatically granting, Special Temporary Authority ("STA") – *simply miss the mark and fail to address the fundamental obstacles to the provision of efficient interagency interoperability by the Amateur Service.*

The Commission's Rules already provide, via 47 CFR Part 97, §§97.401(a), 97.403, and 97.405, insulation of a radio amateur from administrative sanction or criminal prosecution in the event that, under the circumstances described in those sections, the amateur provided essential emergency communications after operating privileges had expired in the course of the emergency, or the amateur resorted to any means of radio communication at the amateur's disposal necessary to effect the essential emergency communications.

This Commenter wishes to make clear that he *does not oppose – and in fact, supports* – those three Independent Panel amendatory proposals on the table; he merely stresses that those proposals, if the only ones adopted, *would have a* de minimis *impact upon the ability of the Amateur Service to fulfill its mission during large scale catastrophes*, and *do not address the fundamental issue raising impediments to fulfillment of that mission: the failure of all levels of government to adequately and effectively integrate the Amateur Service into emergency response planning and operations, which problem is exacerbated by the vague, confusing and outdated language of §97.407 which has deterred local, state and regional governments from embracing an inexpensive, cost-*

effective and easily implemented manner of filling communications interoperability gaps via the RACES program.

Adopting the amendments to § 97.407 proposed herein will not, alone, remedy this problem, but will go a long way toward rendering much more ubiquitous the inclusion of amateur radio in every jurisdiction's emergency response planning and activation.

As detailed *post*, it was *not a lack of FCC authority for amateurs to engage in communications* in the wake of Hurricane *Katrina*, but rather in large part the exclusion of qualified, "certified," security-cleared responding radio amateurs from the disaster zone and the "out of sight, out of mind" absence of amateur radio from the decisionmaking processes of local jurisdictions, which were responsible for the delays in deploying amateur field stations which could have resolved a number of interoperability problems days sooner, with a resulting saving of countless lives.

Put simply, the Commission can and should, address *technical* and *administrative* issues which negatively impact the Amateur Service's emergency communications function, *but limiting FCC's actions to such a narrow focus will not result in significant amelioration of the identified problems, because those problems by and large are not technical or administrative, but rather functional in nature*. The most sweeping liberalization of emergency STA processing and extension of "grace period" operating authority during a disaster *will accomplish no palpable result*, if amateurs are not a *seriously-taken, integral part of every jurisdiction's civil preparedness and defense planning, exercises, and actual utilization during calamities*. Neither will mere lip service substituting as such inclusion accomplish the desired results. Real, substantive regulatory reform is required in order to accelerate the efficient and effective utilization of the Amateur Service. *That reform, however, need not be radical.*

Additionally, actions by the Commission to address that functional problem will be of limited benefit without assurance that each amateur radio emergency responder possesses the knowledge and skill sets to swiftly and effectively establish and maintain the complex, sometimes makeshift, adaptable networks required in order to provide inter-agency communications interoperability. Accordingly, appropriate amendments to Subpart F regarding Amateur Service examination of a license applicant's qualifications, are also proposed herein.

Because of its unmatched frequency agility, unsurpassed network resiliency, rapid response capability, and inherent ability to be configured creatively and repaired "on the fly" by its providers, *Amateur Radio is far and away the greatest communications interoperability resource possessed by this Nation.* But in order for the Amateur Service to fulfill its purpose of providing emergency communications (hereafter "EMCOM") and to play a major role in resolving inter-agency communications interoperability issues, it is essential that

FCC lead the way by modernizing Subparts E and F to address the *functional* obstacles impeding the Amateur Service from fully meeting those vital needs.

The proposals submitted by this Commenter are moderate, benign and revenue neutral, but their impact, he humbly submits, will be substantial.

III.

Summary of Proposals Contained in these *Comments*

(1) **(No Rulemaking Required): Immediate FCC endorsement of HR 5852**, in particular provisions thereof establishing *Regional Emergency Communications Coordination Working Groups* ("RECCs") in each United States Department of Homeland Security ("USDHS") Region and including Amateur Service licensees therein. (*Note*: proposal no. 2, *infra*, incorporates RECCs into the proposed amendatory language supplanting current § 97.407, recited at pp. 26-33, *post*).

(2) **(Rulemaking Requested): Clarification and modernization of 47 CFR Part 97, Subpart E, §97.407** governing the *Radio Amateur Civil Emergency Service* ("RACES") to eliminate the vague, confusing, arcane, overly complex and outdated language of the current codification, supplanting same with language which clearly takes into account the diverse topography of our nation, the susceptibility of a region to a particular type of disaster, and the multitude of communications capabilities a region may possess by, *inter alia*:

> **(A)** setting forth, *in plain language*, how an amateur station participates in RACES, and which individuals are eligible to so participate;
>
> **(B)** setting forth, *in plain language*, how a local emergency manager establishes a RACES program, and providing simple procedures for accomplishing that task, including a standard, recommended form of document which, *inter alia*, attests to establishment of such program and recites the RACES unit's preauthorization to engage in certain RACES communications;
>
> **(C)** expressly providing for an emergency manager's advance written *pre-authorization* for RACES communications, thereby taking into account the problems to be encountered by regions such as Metropolitan Portland, Oregon and its environs, in which the devastation from an earthquake would be so extensive and severe that it would be impossible for a RACES unit to obtain an emergency manager's approval to engage in RACES communications after occurrence of the event;

(D) providing for, in the throes of disaster, a practicable procedure for an emergency manager's *ad hoc* establishment and activation of a RACES unit with full authority to conduct all communications permitted under the section, in cases in which an emergency manager has not implemented in advance the section's procedures for establishing a RACES unit and preauthorizing its RACES communications;

(E) *expressly affirming* the lawful ability of amateur radio EMCOM units to momentarily or temporarily operate under pre-authorized RACES authority when necessary in order to effect swift, efficient and accurate handling of vital emergency message traffic, on a message-by-message basis;

(F) adding Coast Guard, Coast Guard Auxiliary, National Communications System, Military Affiliate Radio System, Civil Air Patrol, National Guard and other similar stations to the recitations of types of stations with which an amateur station participating in RACES may communicate, and setting forth the conditions under which such communications are permitted; and providing that amateur stations participating in RACES may additionally communicate with any station designated by the Secretary, USDHS, *thereby taking into account the multiple communications resources a particular region may possess*;

(G) Generally changing *prohibitory* language to *permissive* language; *e.g.*, by providing that amateur radio stations participating in RACES may communicate with, *inter alia*, a United States Government station unless the latter has been prohibited from engaging in such communications;

(H) adding new language *expressly permitting* a duly authorized radio amateur, when operating a station participating in RACES*, to operate the station in accordance with the privileges attendant to an Extra Class amateur operator license, irrespective of the license class held by that individual*, and noting exceptions;

(I) *repealing* the regulatory limitation on numbers of hours RACES units may conduct on-the-air drills, *replacing* those limitations with other provisions which *more clearly and effectively prevent abuse of the RACES program by*

public service entities, thereby improving readiness and enhancing the inclusion of the amateur service in local emergency response planning and operations;

(J) *updating* the section to reflect the implementation of the *Universal Licensing System* ("ULS");

(K) *expanding* the discrete channels on which amateur stations participating in RACES may establish communications with military units *in order to take into account the unique frequency agility of the Amateur Service which overcomes regional and temporal communications obstacles posed by topographic, geographic, weather and geomagnetic fluctuations*; and *adding other types of stations besides military units to that recitation of stations with which communications may be established and coordination of efforts conducted on said discrete channels*;

(L) *updating* the section by *accounting for the recent amendment by Congress of §606 of the Communications Act* pertaining to Amateur Service and RACES operations during invocation of the President's War Emergency Powers;

(M) making additional changes *incorporating into the section the role played by the new cabinet-level USDHS*.

(3) (Rulemaking Requested): Amendments to 47 CFR Part 97, Subpart F, governing prerequisites to issuance of an Amateur Service operator license, by:

(A) establishing a *new examination element* entirely devoted to *message handling, emergency radio network communications procedures, and other aspects of formal and tactical emergency communications*;

(B) providing for *examination credit to be automatically conferred for the new examination element*, without sitting for examination thereon, upon presentation to the Volunteer Examiner Team of the examinee's successful completion of the *Amateur Radio Emergency Communications Course(s)* ("ARECC") administered by the American Radio Relay League, Inc. ("ARRL");

(C) providing that the *new examination element requirement shall be prospective only*, applying to new license applicants and to examinees seeing to upgrade existing operating privileges;

(D) providing for issuance of a *Certificate of Successful Completion of Examination* ("CSCE") to examinees passing the examination for the new licensing element, and further providing that such *CSCE shall be valid for an indefinite period of time*.

IV.

Interest & Expertise of Commenter and *Alter Ego*

A. Commenter J. Kevin Hunt, Esq. (WA7VTD)

The undersigned has served as an Amateur Radio Emergency Service ("ARES") Assistant Emergency Coordinator ("AEC") for Yamhill County, Multnomah County, Clackamas County and the City of Portland (all in the State of Oregon), as an AEC at large for all of the counties (then six) contained in Oregon ARES District 1, and as co-founder, AEC and RACES Radio Officer ("RO") of Oregon City ARES/RACES.

The undersigned has further, in his capacity as an ARRL Volunteer Counsel, participated as lead negotiator in numerous local jurisdictional proceedings, Task Forces and disputes concerning amateur station support structure regulation by local governments, and has personally drafted numerous ordinances pertaining thereto which were successfully lobbied for passage by those jurisdictions and which were favorable to the Amateur Service in general and to ARES/RACES in particular.

The undersigned has additionally served as General Counsel to three amateur radio organizations which are incorporated under the laws of Oregon as non-profit, public benefit organizations and which are recognized by the Internal Revenue Service as tax exempt, non-profit entities under Internal Revenue Code Section 501(c)(3), one of which is a county ARES/RACES unit.

This Commenter is a member of the Communications Group of the Oregon Trail Chapter, American Red Cross, has served as a Hearings Officer for the Oregon Regional Relay Council, Inc. (the entity formed for coordination of amateur repeaters under FCC *Report and Order* in Docket No. 88-22), has participated in drafting of numerous emergency communications response plans, has received a *Certificate of Merit* from ARRL and a letter of commendation from the Red Cross for emergency communications during the 1985 Mexico City Earthquake, is a Volunteer Examiner (ARRL VEC), and has visited and studied the amateur service emergency response organizations in Canada and Russia.

The undersigned is a Life Member of, past President of, and of legal counsel for the Portland (Oregon) Amateur Radio Club, Inc.; is trustee of

ARES/RACES-dedicated primary amateur club station licenses KD7LNB and KD7ZDO (assigned to Clackamas Amateur Radio Services, Inc. and Oregon City Amateur Radio Emergency Service, respectively); is owner/control operator of a 70 cm repeater coordinated under his call sign; is past member of the Quarter Century Wireless Association, and has taught numerous courses in amateur service license preparation as well as having conducted presentations to ARES/RACES groups on the topics of tactical and formal emergency message handling, and the National Traffic System.

This Commenter has served as a Net Control Station and upper echelon Net Liaison on several high frequency amateur service traffic nets affiliated with the National Traffic System, both the daytime voice and evening Morse code cycles, including the Oregon High Noon Net, Daytime Pacific Area Net, Daytime Region 7 Net, Oregon Section Net, evening Region 7 Net, evening Pacific Area Net, Washington Section Net, Idaho Intermountain Net, and Montana Traffic Net, and is a rostered member of the Oregon Emergency Net and the Noontime Net.

This Commenter was first licensed as a Novice Class radio amateur (callsign WN7VTD) at age 15 in 1972, upgraded to Advanced Class before a Commission Examiner in 1974, and upgraded to Extra Class at a Volunteer Examiner session in 1990. The undersigned has earned radiosports medals (all three levels Bronze, Silver and Gold) as a member of Team USA in international radiosport competitions entailing high speed Morse Code message transmission and reception, DX contesting, and Amateur Radio Direction Finding at several convocations of the *Friendship Radiosports Games* held variously in Portland, Oregon, Khabarovsk, Russia, Kamifusen, Japan and Victoria, B.C., Canada under auspices of the Friendship Amateur Radio Society, Inc., the United States Chapter of which the undersigned was founder and incorporator and for which he serves as General Counsel and as trustee of its primary Amateur Service club station license, callsign WX6S. He is a registered Emergency Services Worker under the Oregon Revised Statutes, for the Clackamas County (Oregon) Sheriff's Office and Oregon City (Oregon) Police Department.

The undersigned is a Wilderness First Responder (Wilderness Medicine Institute, 2001), Certified Oregon Search and Rescue volunteer (Oregon State Sheriff's Association/Pacific Northwest Search & Rescue, 2003), Advanced Certified *SkyWarn* Weather Spotter for the National Weather Service (ID # CS-35H), former Army Military Affiliate Radio System (MARS) operator (callsigns AD7VTD, ACM7VTD) and Navy-Marine Corps MARS operator (callsigns NNN0QWVT and NNN0QWV), has been a certified Emergency Medical Technician (Idaho, 1980), and is a member in good standing pursuant to guest journal authorship, in the American Academy of Sleep Medicine.

This Commenter is a graduate of the Neighborhood Emergency Response Team (Oregon City Fire Dept., 1998) and Community Emergency Response Team (Clackamas County Fire District No. 1, 2004) academies.

The undersigned was admitted to the Oregon State Bar on September 14, 1984 and is admitted to practice before the Supreme Court of the United States (appearing on argument of a matter on December 7, 2005), the United States Court of Appeals for the Ninth Circuit, the United States District Court for the District of Oregon and all of the trial and appellate courts of the State of Oregon, and has additionally appeared before the National Labor Relations Board and numerous state administrative agencies in both Oregon and California. This Commenter emphasizes constitutional law and criminal defense in his practice, in both the trial and appellate courts, and is a Life Member and elected Director of the Board of Directors of the Oregon Criminal Defense Lawyers Association, serving also as its Board Liaison to its Capital Defenders Section.

The undersigned has been a presenter at Continuing Legal Education Seminars concerning, *inter alia*, the application of local planning and zoning law and regulations to amateur radio installations.

B. Commenter's *Alter Ego* Oregon City Disaster Services ("OCDS")

The undersigned's *alter ego*, Oregon City Disaster Services ("OCDS") is a periodically active, unincorporated voluntary association of FCC-licensed Amateur Radio Operators ("hams"), Community Emergency Response Team ("CERT") participants, local Emergency Management ("EM") personnel, General Mobile Radio Service ("GMRS") licensees, law enforcement officials, state certified Search and Rescue ("SAR") volunteers, American Red Cross Disaster Services ("ARCDS") responders, Wilderness First Responders ("WFRs"), Emergency Medical Technicians ("EMTs"), First Responders ("FRs") and volunteer Emergency Services Workers ("ESWs") registered as such pursuant to statutes of the State of Oregon. OCDS is the organization recognized by the federal *Citizens Corps* as the official organ for recognition of citizen hours devoted to community emergency response volunteerism for Clackamas County, Oregon and its County seat, Oregon City.

Prior to launching of the Citizens Corps and the adoption by FEMA of the CERT model, the City of Oregon City commenced efforts in 1998 to train local citizens in Light Urban Search & Rescue ("LUSAR"), disaster medicine, fire suppression, emergency communications, record keeping, dispatch, the Incident Command System ("ICS") and other community self-help in disaster response, pursuant to the Neighborhood Emergency Response Team ("NERT") model pioneered by the City of San Francisco following the Loma Linda earthquake. In January, 1997, local radio amateurs had established a special unit of the Amateur Radio Emergency Service ("ARES") which was later designated by Tualatin Valley Fire & Rescue ("TVF & R") as the official Radio Amateur Civil Emergency Service ("RACES") unit for the community served by TVF &R, which at that time was the local Civil Defense/Preparedness Organization serving Oregon City. Duly qualified members of the Clackamas County, Oregon unit of

ARES – "CARES" [1] – comprise the officially designated RACES unit for Clackamas County.

V.

Experience with Subject Matter

Beyond this Commenter's personal field experience providing disaster communications, OCDS, during its period of active development, helped plan[2]

---

[1] *Clackamas Amateur Radio Emergency Services, Inc.* ("CARES"), a non-profit, public benefit corporation organized under the laws of the State of Oregon, and recognized as a tax exempt, IRC 501(c)(3) organization by determination of the Internal Revenue Service, is the Clackamas County unit of the statewide Oregon ARES/RACES organization, and holds Amateur Service primary club station license KD7ZDO, for which the undersigned is Trustee. CARES Operational Commander David Kidd KA7OZO is the ARES Emergency Coordinator ("EC") for Clackamas County and has been appointed RACES Radio Officer ("RO") for Clackamas County by the County's Director of Homeland Security. Mr. Kidd was one of the charter members of OCDS, which was organized on request of then Oregon City Fire Dept. Chief Jim Davis, by the undersigned, Mr. Billy Toman N7WXD, and Mr. John Williams WB7SJL (soon thereafter elected Mayor of Oregon City) in 1997. CARES has been in continuous existence for over three decades and has maintained a close working relationship with the Clackamas County Sheriff's Office, receiving numerous commendations for assistance to the community during severe weather, floods, SAR missions and other incidents and calamities. CARES maintains a large roster, with only 44 of its members, however, being "certified" to respond to emergencies (*see*, n. 17, p. 35, *post*). All ham organizers/members of OCDS also are – or have been – members of CARES, and the ARES/RACES component of OCDS was made an official subunit of CARES, known as "OCARES." The undersigned was ARES/RACES EC/RO of OCARES from 1997-2002 and 2003-2004. The undersigned is also CARES General Counsel. *These Comments, however, are filed solely on behalf of OCDS and their author.*

[2] It is notable that OCDS, under the guidance of then Oregon City Emergency Manager Margaret Dimmick of TVF & R, formed to execute such community volunteer disaster response planning and coordination ***four years prior*** to establishment of the *Citizens Councils* charged with such functions under the federal Citizen Corps program. It is also of note that at present, the official "Citizens Council" for Clackamas County consists of *a single individual* (affiliated with County government), and has not established liaison with local volunteer disaster response groups, does not hold announced meetings, and appears to exist solely as an effort by County government to co-opt and preempt activities such as those of OCDS. ***This paradigm exists in many jurisdictions and is related to the phenomenon of local governments applying for federal Homeland Security grants, and then shifting the granted funds to regular operational needs rather than applying the funds solely to the intended use.*** This very scenario occurred in Clackamas County, wherein a former County Emergency Management official solicited from ARES leaders a detailed and comprehensive manifest of interoperable

and participated in numerous complex, comprehensive drills simulating actual on-the-ground conditions to be encountered in a major disaster such as an earthquake, involving *all citizen volunteer components* in establishment of makeshift command posts, triage areas, *ad hoc* transportation fleets, LUSAR, damage assessment, patient extrication and treatment and coordination via the Amateur Service and GMRS with hospitals, public works departments, water bureaus, fire/rescue, police, church organizations, American Red Cross, etc., and in the course of coordinating such unusually realistic, lengthy exercises endeavored to create mock communications emergencies by simulating total failure of the Public Switched Telephone Network ("PSTN"), cellular/PCS services, 9-11 dispatch, the Internet, and 800 MHz trunked public safety radio systems, while intentionally attempting to overload the auxiliary emergency communications channels (including ARES/RACES outlets) with message traffic. Unlike typical exercises, OCDS drills did not proceed according to "scripted" events known to participants in advance, and all message traffic was in real time and in accordance with the ever-changing simulated conditions promulgated during the course of the events by no more than two persons managing the drill.

The particular vulnerability of Oregon City to especially egregious and massive human casualties, conflagrations and cataclysmic property destruction in the event of a relatively moderate (*e.g.*, Richter Scale 6.0) earthquake led to the City's selection as the "scenario city" on which a national EM training exercise and seminar was conducted in Washington, D.C. by FEMA in 1998. As a result of these and other continuous preparation, testing and training efforts for nearly a decade (as well as responses to actual emergency incidents), OCDS' amateur radio component OCARES has been recognized with commendations by TVF &R and the City Commission of Oregon City, has placed in the "top ten" nationally in annual ARRL-sponsored *Simulated Emergency Tests*, and OCDS has been deemed the model upon which newly rejuvenated efforts to train CERT units county-wide is to be based,[3] and is in a unique position to comment on current impediments to delivery of efficient and effective emergency communications.

---

communications equipment needed in order to effectively integrate the Amateur Service into the local disaster response plans – only to shift use of subsequently granted USDHS funds to general Sheriff's Office operational needs. ***Though review of USDHS grants is beyond the Commission's scope of responsibility, FCC can, and should, firmly communicate to USDHS its concern about misapplication of homeland security grant funds intended for enhancing auxiliary emergency communications, by acting on this Commenter's request that FCC immediately endorse and support HR 5852 — see, pp. 17-19, post. Such misapplication of funds leaves communities vulnerable to Katrina-like exacerbation of human casualties due to lack of effective, agency-interoperable EMCOM.***

[3] ***SOURCE***: Personal conversation with Capt. John Wheeler, Clackamas County Fire Dist. No. 1, autumn, 2005.

Several such impediments were identified during a multi-jurisdictional exercise in 2003 (*"Quakex '03"*), in which for the first time it became apparent that (1) governmental and private response and relief agencies would not be able to effectively communicate during a major incident notwithstanding having undertaken numerous communications infrastructural investments and enhancements; (2) notwithstanding its status as the only viable vehicle for establishing inter-agency communications interoperability, the existing ARES/RACES paradigm for delivery of emergency communications (hereafter "EMCOM") will be unable to support that function effectively in the absence of certain reforms, some of which are the subject of these *Comments*. The result of inaction on these issues will inevitably and undeniably be unnecessary and extensive loss of human life. In all prior exercises, ARES' ability to handle the task appeared adequate; however, owing to adjustments to the exercise scenario by then EM Jeff Rubin, which more realistically simulated the needs and problems that would arise on the part of the primary rescue service, there was an almost instantaneous overload and collapse of the local ARES network, serious District-wide network deficiencies were exposed, and whereas OCARES had previously maintained message rates of 85 per hour in prior exercises, it managed to pass only four messages in a four-hour period.

Solely in order to demonstrate the *bona fides* and seriousness with which the undersigned submits the proposals recited herein, the undersigned relates that he has, for three years, attempted to draw the attention of subsequent emergency managers and Amateur Service emergency response group leaders to the specifically documented defects in the current configuration of the local and District Amateur Service emergency communications network which, during the undersigned's tenure as Emergency Coordinator/Radio Officer of Oregon City ARES/RACES, were exposed during the above-referenced *Quakex '03* exercise – to no avail. The undersigned cannot help but compare this lack of attention by those in a position to remedy the problems, to the pre *9-11* warnings related by an FBI field agent to her superiors regarding apparent preparations by foreign agents to commit a major act of major domestic terrorism, and to the warnings of private contractor engineers to their bosses and to NASA expressing concern regarding the frigid-temperature resiliency of O-rings in the solid rocket boosters of the Space Shuttle. In each of those examples, failure to act upon the repeated warnings resulted in loss of life; in the latter case seven lives, and in the former case, 3,000+ lives.

Whereas the undersigned has no power to compel others in positions of local authority to address the issues revealed in *Quakex '03* which will without question result in inability of the local Amateur Service emergency communications networks to handle essential inter-agency communications during a large-scale disaster, thereby resulting in unnecessary loss of life — the Commission thankfully is imbued with authority to definitively address other issues *of global application* to the provision of inter-agency communications interoperability via the Amateur Service nationwide and in each community. The

two substantive rulemaking proposals tendered herein have been carefully thought out and are predicated upon the undersigned's 30+ years of experience as a volunteer, organizer, planner and leader of Amateur Service emergency communications response groups and actual field experience in disasters large and small. They further are crafted with benefit of the undersigned's 22 years of experience as a practicing attorney, emphasizing matters of Constitutional concern. It is therefore humbly requested that the Commission give due and careful consideration to the substantive rulemaking proposals detailed *post*.

VI.

Role and Authority of the Commission

As guardian of the "public interest, convenience and necessity" pursuant to the Communications Act of 1934, as amended, and its progeny, the Commission is charged, *inter alia*, with promulgation of rules and regulations which will implement the intent of the Congress and Executive Branch concerning use of the means of telecommunication for the general welfare, and in particular for the development and maintenance of pools of trained electronics experts and providers of emergency communications in times of disaster, with regard to the Amateur Service. See, 47 CFR Part 97, § 97.1, paragraphs (a), (d).

It is curious (and, respectfully, alarming) that, notwithstanding the express recognition of this duty in the Code of Federal Regulations and numerous Congressional Resolutions,[4] *the Amateur Service and its emergency response*

---

[4] *See,* for example, FCC Authorization Act of 1988, Pub.L.No. 100-594, 102 Stat. 3021, 3025 (November 3, 1988) reciting, in relevant part: "The Congress finds that — (1) More than 435,000 radio amateurs in the United States are licensed by the Federal Communications Commission upon examination in radio regulations, technical principles and the International Morse Code; (2) By international treaty and the Federal Communications Commission regulations, the amateur is authorized to operate his or her station in a radio service in intercommunications and technical investigations solely with a personal aim and without pecuniary interest; (3) Among the basic purposes for the Amateur Radio Service is the provision of voluntary, noncommercial radio service, particularly emergency communications; and (4) Volunteer Amateur Radio emergency communications services have consistently and reliably been provided before, during and after floods, tornadoes [*sic*], forest fires, earthquakes, blizzards, train wrecks, chemical spills and other disasters. It is the sense of Congress that — (1) It strongly encourages and supports the Amateur Radio Service and its emergency communications efforts; and (2) Government agencies shall take into account the valuable contributions made by Amateur Radio operators when considering actions affecting the Amateur Radio Service." *See, also,* Pub.L. No. 103-408 (J.R., 103d Cong.; Oct. 22, 1994) reciting, in relevant part: "Congress finds and declares that — (1) radio amateurs are hereby commended for their contributions to progress in electronics, and for their emergency radio communications in times of disaster; (2) the Federal Communications Commission is urged to continue and enhance the development of

alter egos and partners – ARES, RACES, Military Affiliate Radio System ("MARS") and National Communications System ("NCS") – were not referenced once in the eight-page report summarizing the Commission's actions taken in the immediate wake of Hurricane Katrina.[5] It is clear from this omission, and from extensive and voluminous first-hand reports disseminated by radio amateurs during the acute phase of that calamity, *that the role of the Amateur Service was essentially overlooked at all levels of government.* While radio amateurs, individually and collectively, engaged in numerous examples of heroism and personal sacrifice in provision of EMCOM, saving several lives, it is evident that viewing those efforts objectively solely from the perspective of the high standards radio amateurs themselves establish for their execution of those functions, they were a failure, due almost exclusively to the larger failure of governments at all levels to continuously and prominently embrace the Amateur Service in emergency response planning, budgeting, legislating, and operational deployment.

Time and again, reports emerged of "official" ARES/RACES units being stopped at police checkpoints and prevented from deploying into the disaster area, notwithstanding "official" identification issued by state and/or local governments stating the function of these *first responders*[6] and requesting their

---

the amateur radio service as a public benefit by adopting rules and regulations which encourage the use of new technologies within the amateur radio service; and (3) reasonable accommodation should be made for the effective operation of amateur radio from residences, private vehicles and public areas, and that regulation at all levels of government should facilitate and encourage amateur radio operation as a public benefit."

[5] Presentation of Kenneth Moran, Director, Office of Homeland Security, *Enforcement Bureau Agenda Meeting of the Federal Communications Commission*, Atlanta, Georgia, September 15, 2005.

[6] In 2003, The USDHS and ARRL entered into a "Statement of Affiliation" ("SoA") under which the Amateur Service, under auspices of ARES/RACES, was to provide EMCOM support for the CERT program and other FEMA initiatives. *At the SoA signing ceremony, the White House declared that "amateur radio operators are the first of the first responders."* The ARRL reported the development on its web site, www.arrl.org, as follows (emphasis added by the undersigned):

> "ARRL now is an official affiliate program of Citizen Corps <http://www.citizencorps.gov>, an initiative within the Department of Homeland Security <http://www.dhs.gov/dhspublic/> to enhance public preparedness and safety. ARRL President Jim Haynie, W5JBP, signed the formal Statement of Affiliation between DHS and ARRL during the ARRL 2003 National Convention June 21. Chief Operating Officer of the Emergency Preparedness and Response Directorate (FEMA) Ron Castleman represented Under Secretary for Emergency Preparedness and Response Michael D. Brown at the signing. **Citizen Corps Liaison to the White House Liz**

safe passage. On a daily basis, elected leaders of the affected jurisdictions had to resort to appearances on *Cable News Network* ("CNN") in order to attempt to pass information and requests to FEMA. By far, the most oft-repeated lament of those leaders and EM personnel in the affected areas was *the lack of communications – not merely within the disaster zone, but to the outside world*.

DiGregorio called ham radio operators the "first of the first responders." *(footnote con't next page...)*

"You are there. You are part of that very, very first response when it happens locally," especially in the initial stages of an emergency or disaster, DiGregorio told an overflow audience. She urged amateurs to explore ways to expand their role in the community beyond being the last resort when other communication systems fail. "You need to show your community that you're engaged," she said. "They need to know as a community that ARRL is there."

Castleman said his agency really needs Amateur Radio's help. "Hams have a long and distinguished history of assisting and cooperating with FEMA," he said. He said FEMA wants to continue to work with Amateur Radio operators as partners and expand hams' community safety role. "We also want to help prepare every citizen across our country before disaster strikes," Castleman said.

The League joins the National Safety Council, Points of Light Foundation, National Voluntary Organizations Active in Disaster, National Volunteer Fire Council, National Fire Protection Association, Save A Life Foundation and The Jaycees as Citizen Corps affiliate programs.

The SoA calls on DHS and ARRL to raise public awareness of Amateur Radio as a safety resource. "That's what you are all about, and we need a safer America," DiGregorio said.

In addition, DHS and ARRL will cooperate in providing training and accreditation for Amateur Radio emergency communications. They also will work together to promote the formation of local Citizen Corps councils and assist them with education, training and volunteer service opportunities "that support first responders, disaster relief organizations and community safety efforts." As an affiliate, ARRL will be linked from the FEMA and Citizen Corps Web sites.

"We need you, and you need us, and we want to work together with you to make this all happen," DiGregorio concluded, "because we all share the same goal, and that goal is a better, stronger, more secure America."

The ARRL National Convention 2003 was held in conjunction with Ham-Com <http://www.hamcom.org> in Arlington, Texas. FEMA announced the SoA signing on its Web site <http://www.fema.gov/nwz03/nwz03_138.shtm>.

Additionally, the disaster area was inundated with disorganized, distracting health and welfare inquiries communicated by distant individuals via various means, without timely amelioration of that problem through prompt establishment of a coordinated refugee personal data collection procedure fed into an *outgoing only* amateur radio health & welfare traffic station proximal to the disaster zones.[7]

ARRL responded to the *Katrina* EMCOM problem in an unprecedented and heroic fashion, swiftly making contact with federal and state government officials, organizing a crash nationwide program for deployment of qualified ARES/RACES volunteers to the disaster area, and establishing in partnership with government, guidelines for those volunteers' unmolested transit into the impacted zones. As highly commendable as this effort was, *it should not have been necessary* and the delays in effecting deployment of trained and recognized EMCOM volunteers *most certainly cost numerous lives*.

With all of the genuine respect the undersigned has for this Commission, he is compelled by circumstances to candidly observe that the total omission of *even the mention* of the Amateur Service from the first written report prepared for USDHS summarizing for FCC Commissioners the FCC's response to Katrina, is symbolic of the inherent, structural, systemic, primary problem at all levels of government: *the abysmal failure to live up to the legal and public policy obligations and duties to develop and embrace the Amateur Service as a trained pool of electronics experts and ready reserve force of EMCOM providers, those obligations and duties being ones which both the Congress and this Commission have repeatedly espoused* The mere, ritualistic incantation of policy mantras, unfortunately, does nothing to provide for the public interest, convenience and necessity.

It is therefore laudable that the Commission now seeks Comments in this proceeding addressing *all* communications services, including the Amateur Service. The following section enumerates three steps the Commission should

---

[7] The *Salvation Army Teams Emergency Radio Network* ("SATERN") rapidly activated its renowned high frequency amateur radio network to facilitate this essential need, and performed laudably, given the government-erected obstacles preventing implementation of a coordinated, amateur radio-facilitated, outgoing only, refugee health & welfare data collection and dissemination operation implemented from the disaster zone – *an omission which should never be repeated*. Moreover, under standard protocols uniformly recognized by the American Red Cross and the ARRL's *National Traffic System* ("NTS"), even outgoing-only health & welfare traffic should be embargoed for a minimum of 72 hours in order to concentrate all available EMCOM resources on immediate disaster response exigencies – a policy not followed in *Katrina* as a result of the lack of adequate prior integration of the Amateur Service into local emergency response planning, and/or failure to actually implement protocols previously integrating amateur radio into local emergency response plans.

immediately undertake as its *initial effort* to execute its obligations *viz*. the Amateur Service and its prime directives re emergency response.

VII.

Proposed Commission Actions in Detail

1. The first very immediate step the Commission should undertake – entirely revenue neutral from FCC's standpoint and requiring no rule promulgation – is to forthwith correspond, though Commission Chairman Martin, with the President of the United States, Senate Majority Leader Bill Frist (R-Tenn.), and the Chairman of the Senate Committee on Homeland Security and Governmental Affairs (Sen. Susan Collins, R-Maine), urging expedited hearings on, and adoption of, HR 5852, *"The 21st Century Emergency Communications Act of 2006,"* which passed the House of Representatives on a vote of 414-2 the week of July 24, 2006. Commission Chairman Martin should specifically urge the Senate Committee to report the Act out with a "Do Pass" recommendation, with the provisions pertaining to inclusion of Amateur Service licensees on the proposed USDHS "Regional Emergency Communications Coordination Working Groups" left intact. The Act is concisely summarized in the following excerpt from *The ARRL Letter:*[8]

> A bill to enhance emergency communication at the Department of Homeland Security (DHS) includes Amateur Radio operators as part of an overall effort to provide interoperability among responders. The 21st Century Emergency Communications Act of 2006 (HR 5852), an amendment to the Homeland Security Act of 2002, passed the US House this week on a 414-2 vote and has gone to the Senate. Its sponsor, Rep David G. Reichert (R-WA) -- who chairs the Subcommittee on Emergency Preparedness, Science and Technology -- says his legislation is designed "to improve the ability of emergency responders to communicate with each other – interoperability.
>
> "Until the events of September 11, 2001, many people in this nation believed and assumed that first responders from different disciplines and jurisdictions could actually talk to each other," Reichert -- a former police officer -- told the House in support of his bill. "It wasn't happening. It is still not happening today. Unfortunately, that was not the case then, and, as demonstrated by the inadequate responses to Hurricane Katrina, that is not the case today."
>
> Reichert told his colleagues that the inability of first responders to communicate with each other effectively led to the loss of many lives along the US Gulf Coast last year. "This is simply unacceptable," he said.

[8] Vol. 25, No. 30 (July 28, 2006) (reproduced with express permission recited in original document).

> His measure also would require the DHS to strengthen its efforts to improve emergency communications. HR 5852 calls for Amateur Radio operators to be part of a " Regional Emergency Communications Coordination Working Group" (RECC Working Group) that would be attached to each regional Department of Homeland Security office. The RECC Working Groups would advise federal and state homeland security officials.
>
> In addition to radio amateurs, membership in the RECC Working Groups would include state and local officials; law enforcement, first responders such as fire departments; 911 centers; hospitals; ambulance services; communications equipment vendors, telephone, wireless satellite, broadband and cable service providers; public utilities; broadcasters; emergency evacuation transit services; state emergency managers, homeland security directors or representatives of state administrative agencies; local emergency managers or homeland security directors, and "other emergency response providers or emergency support Providers as deemed appropriate."
>
> Federal government representatives to the RECC Working Groups would include representatives from the DHS "and other federal departments and agencies with Responsibility for coordinating interoperable emergency communications" with state, local and tribal governments.
>
> According to the bill, the RECC Working Groups would function to assess the survivability, sustainability, and interoperability of local emergency communications systems to meet the goals of the National Emergency Communications Report. That report would recommend how the US could "accelerate the deployment of interoperable emergency communications nationwide."
>
> The RECC Working Groups also would be tasked with ensuring a process to coordinate the establishment of "effective multi-jurisdictional, multi-agency emergency communications networks" that could be brought into play following acts of terrorism, natural disasters and other emergencies.
>
> HR 5852 has been referred to the Senate Committee on Homeland Security and Governmental Affairs.

Passage of this Act would also put an end to the abuse of USDHS grant moneys intended for communications interoperability enhancements, which have been diverted to other uses. (*See*, footnote 2, pp. 11-12 of these *Comments*, *ante*, for an example). The legislation requires state and local governments to promulgate statewide interoperability communications plans before being able to use DHS grant funds for emergency communications. Such funds as were granted could then be used for equipment that met those standards, only.

Of course, as 'working groups,' 'committees,' 'task forces' and similarly denominated entities spend months 'studying' an already-identified problem, the

spectre looms of already existing protocols, programs and paradigms remaining dormant and/or ineffectual, as we 'fiddle while Rome burns.' Accordingly, FCC should immediately act to facilitate the embracing, by all levels of government, of those existing protocols, programs and paradigms, the lack of recognition by local and state government of which constituted a major factor in the *Katrina* communications catastrophe. *The following two additional proposed FCC actions address this spectre.*

2. The second immediate step the Commission should undertake – which could alternatively be combined by the Commission, if desired, in its forthcoming *Final Report and Order* on the proposed Omnibus recodification of 47 CFR Part 97 currently under its consideration[9] – is a clarification and modernization of the provisions of § 97.407 of Subpart E, 47 CFR Part 97, pertaining to emergency communications in general and to RACES communications in particular.

Basis and Reasons for Requested Amendments to § 97.407

The existing RACES language, while easily interpreted by this lawyer, is so complex, vague, undefined, arcane, confusing, outdated and 'legalistic' as to serve as a deterrent to its implementation by the "local civil defense organization directors" it references. As an example, the Portland Amateur Radio Club, Inc.[10] ("PARC"), in its then-official capacity as the ARES organization serving the City of Portland, Oregon, requested in 1990 that the Director of the *Portland Office of Emergency Management* ("POEM") execute a certificate recognizing the enrollment of duly-qualified and trained PARC ARES volunteers – who had passed Oregon Department of State Police ("DSP") background checks and been issued DSP identification cards reciting their status as RACES volunteers – in the City of Portland "Civil Defense Organization" ("CDO"), and reciting POEM's pre-authorization of then-PARC primary club amateur station W7KYC (now W7LT), and of the duly registered radio amateur CDO volunteers, to operate as amateur stations participating in RACES to the full extent authorized under 47 CFR § 97.407 *et seq*.

PARC's request – which included a properly worded document drafted by the undersigned – was referred by POEM to the *Portland Bureau of Fire, Rescue & Emergency Services* ("PFB"), where it languished for several months until a

---

[9] WT Docket No. 04-140.

[10] Portland Amateur Radio Club, Inc., *Inc.* ("PARC"), a non-profit, public benefit corporation organized under the laws of the State of Oregon, and recognized as a tax exempt, IRC 501(c)(3) organization by determination of the Internal Revenue Service, maintains a roster of approximately 150 members, the majority of whom are active in ARES. The undersigned is of counsel for, and a Life Member and past President of PARC. *These Comments, however, are submitted on behalf of OCDS, and himself, only.*

Division PFB Chief (also a PARC member) succeeded in prompting the Chief of PFB to take action on the proposal. That action, however, consisted of referring the proposal to the *Office of City Attorney* (the Special Assistant to the City Attorney was a PARC member and ARES volunteer, which did facilitate a quicker response than one would have otherwise obtained). Although the Office of City Attorney and the undersigned worked out minor language details in a matter of three weeks, the proposal next was referred to the *City Commissioner* charged with oversight of PFB. Again, much eventual prodding was required in order to move the proposal beyond that City Commissioner's desk, and the document was *again returned to the Office of City Attorney.* Thereafter, further negotiations over *trivial language* ensued. *Finally, five years after it was submitted for approval and execution, PARC received the executed certificate. Unfortunately, by that time PARC had ceased to be the official ARES unit serving the City of Portland (by virtue of statewide ARES reorganization) and in short order the certificate was moot. The entire process thus had to be commenced anew.*

In an even more egregious example, the same request was undertaken by CARES[11] with the Clackamas County Sheriff's Office ("CCSO"), the latter of which, pursuant to Oregon Statute, is the Emergency Management lead agency for Clackamas County and which is also the primary CDO served by CARES.

Ten years after its submission to the former County Emergency Manager, with prodding by the undersigned and by successive CARES ECs, the RACES certificate was executed and delivered to CARES, following the document's tenure of multiple years in the purgatory of the County Counsel's office. The most frequent responses obtained by the undersigned when inquiring of the County Counsel's office regarding the document's status, were substantially the following: (A) "We have it under review but don't understand the implications of it, or of the CFR provisions, and need to consult with the Attorney General;" and (B) "We can't find the document you're asking about; could you provide us with another copy of it and of the federal regulations you've cited and previously submitted? No one in our office or the Sheriff's Office has ever heard of these regulations before, or knows what their ramifications are."

By contrast, the turnaround times, from submission of such a requested document to each of two successive Emergency Managers of TVF & R and receipt back to OCARES of executed copies thereof, were two minutes and one week, respectively. Accordingly, as a stop-gap measure, CARES negotiated an agreement with TV F & R under which, during the final three years the County RACES document languished in the County Counsel's Office, duly enrolled, registered, qualified and security-cleared CARES volunteers were appointed as "special" members of the City of Oregon City CDO (TVF & R) in order to accommodate any exigent need for RACES communications on behalf of the County. That extension of cooperation to an amateur service emergency

[11] *See*, n .1, p. 11, *ant*e.

response unit by the civil defense organization of a different but partially overlapping jurisdiction was a rare and highly commendable accommodation of the served community's needs. *The contemporary local government paradigm entailing multiple agencies and special service districts with overlapping geographic and service delivery obligations exacerbates the aforementioned obstacles to utilization by local authorities of the unique communications interoperability facility offered by RACES.*

The undersigned is aware, by virtue of having been requested to draft and supply RACES documentation tailored to the specific nature of the units involved, that several ARES units in Oregon have requested such documents from their served CDOs, and that the results have been wildly inconsistent, with some local CDO Directors enthusiastically and immediately executing the certificates, while others passed the buck to successive local officials in a never-ending game of "musical chairs."

It is simply intolerable that a trained, qualified and instantly available unit of amateur radio emergency first responders should require the services of a lawyer to decipher the RACES provisions, that local Emergency Management officials should have to be perplexed about whether they are "Director of the local Civil Defense Organization," and that local government legal counsel should feel compelled to seek consultations with state Attorneys General, in order for the provisions of § 97.407 of Subpart E to be effectively implemented by each community*. It is obvious that such effective implementation will simply not occur to any ubiquitous degree, under the current codification.*

Delays in the implementation by local emergency managers of such a simple and basic act clearly provided for by the Commission's rules are of particular concern for three reasons:

(A) It is a truism, borne out by the undersigned's 30 years of experience in these endeavors, that in the field of Emergency Management, it is common for Emergency Managers to frequently come and go. For example, in the case of POEM, the EM position has generally been one applied for and assumed by PFB personnel as a means of transitioning to other, more desirable and lucrative bureau assignments – a phenomenon not unique to the City of Portland and one which was highlighted in an expensive outside audit of the Multnomah County (Oregon – wherein Portland is County seat) Office of Emergency Management commissioned by the County Commission, and cited therein in the auditor's recent report as one reason among many that Multnomah County's Emergency Management planning falls far below acceptable standards.[12] The frequent

[12] "Report slams disaster plan — *County's emergency management office called unprepared, understaffed*," by Nick Budnick; *The Portland Tribune*, June 29, 2006, p.1

replacement of local Emergency Managers in turn disrupts (and in many cases completely vitiates) the often difficult-to-establish rapport and working relationship between local ARES officials and the local CDO. When a simple, basic task such as chronicled here, which is expressly explicated in the Commission's Rules, is not performed in a prompt manner upon request of those "registered" with the "local civil defense organization," commonly the entire process of requesting performance of that task must commence anew, owing to the departure of the local Emergency Manager for greener pastures during the pendency of the request.

(B) Particularly in such cataclysmic and widespread disasters as *Katrina*, there is an urgent need for intercommunications between and among various governmental agencies, and non-governmental organization ("NGOs"), the intercommunication among which may, under Subpart E, be accomplished via amateur stations participating in RACES. The prompt and successful rescue of many more victims of *Katrina* could have been facilitated, for example, had amateur stations participating in RACES been able to – *without having to first engage in the impossible mission of chasing down an Emergency Manager in order to obtain authorization to perform functions permitted under a federal regulation the EM has never heard of and has no time to consider* – immediately undertake communications on the codified RACES channels with ARES stations and rescue coordination units of the military and United States Coast Guard.

(C) Moreover, the relevant military, Coast Guard, fire/rescue service, police and governmental and NGO disaster relief entities, are almost universally and invariably *totally unaware* that such a lawful capability of amateur radio intercommunication facility exists which can link those entities together in order to rapidly collect and transfer information critical to saving lives and property. For example, if the pilot of a Coast Guard rescue helicopter knew in advance that by turning to a particular codified RACES channel, he/she could thereby communicate with ground-based amateur stations participating in RACES and receive and transmit data concerning those in need of rescue, the enhanced ability to save lives would be incalculable.

Additional reasons compel redrafting and modernization of §97.407:

- The present language does not reflect the consolidation of civil preparedness and defense functions into the new cabinet-level Department of Homeland Security.

- As currently written, the section does not make plain that resort to RACES protocols may be had on a temporary or *ad hoc* basis by properly registered and duly authorized

members of amateur radio emergency response organizations such as those serving in dedicated ARES units.

- The section's present limitations upon numbers of hours which may be devoted to on-the-air RACES drills and training – intended to prevent repetition of prior abuse of the Commission's former Rules by public agencies installing amateur radio equipment in their facilities and vehicles and having their employees utilize same on a regular basis in lieu of radio services intended for such agencies' use – have a negative effect upon volunteer amateur responder readiness, and the same objective may be reached by prohibiting regular compensation and employment of RACES volunteers and by explicitly prohibiting the abuse in question.

- The language pertaining to frequencies and band segments reserved for RACES operations is confusing to laypersons, and the manner in which it is coupled with limitations on RACES frequency utilization during invocation of the Presidential War Emergency Powers exacerbates such confusion. The section is outdated in this regard as well, because § 606 of the Communications Act has recently been amended such that the President's invocation of the War Emergency Powers no longer automatically results in suspension of normal Amateur Service operations; rather, such invocation of the War Emergency Powers effects such suspension of the Amateur Service except for RACES, only if the President expressly so provides when invoking those powers. At the same time, reservation of particular frequencies and band segments for use by amateur stations participating in RACES for authorized intercommunications with non-amateur stations, makes immense sense but the only provision therefor in the current language of § 97.407 permits utilization of one 80 meter and one six meter frequency, and authorizes such intercommunication with military units, only. Such limitations waste one of the primary advantages of Amateur Service emergency communications, namely frequency agility which can compensate for varying propagation conditions over various signal paths at various times during emergency response operations.[13] The

[13] During periods of high solar activity, the amateur six-meter band will sporadically "open," placing relatively close-spaced stations within each other's "skip zones" and rendering local point-point communications problematic on that band while resulting in reception of transmissions from units hundreds or thousands of miles distant – a phenomenon which led to the general movement of police and other public safety communications from the 33-50 MHz "VHF low band," to the 150-174

Commission's and Congress' goal of enhancing communications interoperability would best be served by designating the frequencies and band segments recited in current § 97.407, subsection (b), for dual purposes: (1) for use by amateur stations participating in RACES in the event the President were to order suspension of normal Amateur Service operations in conjunction with invocation of the War Emergency Powers; (2) for use by amateur stations participating in RACES in establishing communications with United States government, military, Coast Guard and similar stations, including stations in the National Communications System ("NCS"), and for coordination of relief efforts with stations serving such agencies.

- The present language of § 97.401 additionally fails to reflect the recent modernization of the Commission's licensing system and concomitant conferring of operating privileges upon appearance of a licensee's status in the FCC Universal Licensing System database, which listing has supplanted physical possession of a licensing document as the means of verifying an individual's authority to operate an amateur station to the extent permitted according to the class of operating privileges granted to the individual.

Finally, as noted in other *Comments* submitted in this proceeding, *under certain circumstances in which the emergency communications interoperability facility of the Amateur Service is required, the differences in operating privileges afforded to holders of varying classes of amateur operator license poses an impediment to effective utilization of that facility.* As a practical matter, the Commission does not have resources to police and enforce RACES volunteers' adherence to the operating privilege limitations imposed by their varying classes of license, such expenditure of resources would be a diversion from the primary objective of promoting effective emergency communications, and even if enforcement proceedings were initiated arising from a licensee's emergency communications operation in excess of privileges imposed by his or her operator license class, the operator's culpability would be in doubt and would require application on a case by case basis of the provisions of §§97.401(a), 97.403 and 97.405.

MHz "VHF high band," in the 1970s. Those same active solar conditions will render amateur 80-meter band communications beyond a few miles problematic due to ionospheric D-layer absorption. Further, the practical limitation on the size of efficient field antennas generally corresponds to the wavelength of the 40-meter band (at which a quarter-wavelength unloaded vertical is 33 feet in height, and a half-wavelength unloaded dipole is 66 feet in length). It is due to such limitations that most (but by no means all) commercially manufactured and marketed portable and mobile HF antennas extend operationally to a maximum efficiently usable electrical wavelength of 40 meters.

At the same time, such privilege limitations in accordance with license classes for which each licensee has stood examination, have been established by FCC on a rational basis and prudence counsels against tinkering with that licensing scheme where such tinkering is unnecessary to achieve the desired result. *The most reasonable and logical approach, therefore, consistent with other provisions of Subpart E, is to amend §97.407 to provide simply that when providing emergency communications as the operator of an amateur station participating in RACES only, any duly authorized licensee may operate such station to the full extent of privileges afforded to holders of an Extra Class amateur operator license.*

Each of the aforementioned concerns is addressed in the proposed re-write of § 97.407 recited below.

Specific Supplanting Language Proposed

For all of the foregoing reasons, the undersigned respectfully proposes that the Commission rewrite 47 CFR § 97.407 *et seq*, such that the new supplanting language is plain, and is amended to address contemporary EMCOM interoperability requirements, the new language to read substantially as follows:

> **§ 97.407. Radio Amateur Civil Emergency Service (RACES).** No amateur station shall operate under RACES authority except as provided in this section, and no individual shall be the control operator of an amateur station participating in RACES or directly communicate by use of such station, except as permitted under this section.
>
> Nothing in this section, however, prohibits an otherwise authorized third party from speaking over the microphone, typing on the keyboard, or otherwise uttering communicative information over an amateur station participating in RACES which is under the direct control of a duly authorized RACES unit member.
>
> This section applies to all stations operated in RACES, whether they are amateur stations participating in RACES, or RACES stations operated pursuant to valid, unexpired RACES licenses issued during the period of time the Commission issued RACES station licenses. For purposes of this Section, both types of RACES-affiliated stations shall be referred to as "amateur stations participating in RACES."
>
> **(a) Definition and Scope of RACES.** The Radio Amateur Civil Emergency Service (RACES) is a volunteer program utilizing FCC-licensed radio amateurs for the provision of vital auxiliary communications during local, state and national emergencies.
>
> > **(1)** Any amateur service station or amateur satellite service station (hereafter collectively "amateur station") and any individual, meeting the criteria of this section may participate in RACES.
> >
> > **(2)** RACES is intended specifically to enhance the ability of the amateur service to facilitate communications interoperability among various

governmental and non-governmental emergency response and disaster relief agencies. All RACES operations must be conducted in accordance with the provisions of this section.

(3) The provisions of Sections 97.401(a), 97.403 and 97.405 are applicable to this section, except as otherwise provided herein.

(b) Scope of Station Authority to Communicate in RACES. Provided the requirements of this section are met, any amateur station participating in RACES may communicate with:

(1) Any other amateur station, and any other amateur station participating in RACES, in the course of drills or the provision of emergency communications in accordance with this section;

(2) Any amateur station for the purpose of passing message traffic of the types enumerated in subsection (i) of this section;

(3) Any RACES station operating pursuant to a valid, unexpired RACES station license issued during the period of time the Commission issued such licenses, in the course of drills or the provision of emergency communications in accordance with this section;

(4) A United States Government station in the course of provision of emergency communications in accordance with this section, unless the responsible agency served by the United States Government station has prohibited it from communicating with amateur stations participating in RACES;

(5) United States Military, Military Affiliate Radio System ("MARS"), National Communications System ("NCS"), Coast Guard, Coast Guard Auxiliary, Civil Air Patrol and, when under federal command, National Guard and Air National Guard stations, during actual provision of essential communications needs in connection with the immediate safety of human life and immediate protection of property only, when normal communications systems are unavailable or inadequate for such purposes, unless the responsible agency to which such station is attached or which is served by such a station has prohibited it from communicating with amateur stations participating in RACES;

(6) National Guard and Air National Guard stations, when under State command authority, during actual provision of essential communications needs in connection with the immediate safety of human life and immediate protection of property only, when normal communications systems are unavailable or inadequate for such purposes, unless the State command authority of the National Guard or Air National Guard station has prohibited it from communicating with amateur stations participating in RACES;

(7) Any station in any service regulated by FCC, unless such communication has been expressly prohibited by FCC;

(8) Any other station, whether or not in a service regulated by FCC, and whether or not operating under Commission license, when the other station is in distress, is relaying communications from another station in distress, or is transmitting communications of an extremely exigent

nature under Section 97.401(a) or under the exceptional circumstances described in Sections 97.403 and 97.405, except when any such particular communication has been expressly prohibited by FCC or by directive of the President of the United States in conjunction with the President's invocation of the War Emergency Powers;

(9) In addition to the foregoing: any non-amateur station designated in a *Notice of Agencies Authorized to Communicate via RACES* issued at any time by the Secretary of the Department of Homeland Security, which shall be effective upon the earlier of its transmittal to the Commission or its publication in the *Federal Register*, whether authorized by the Secretary on an *ad hoc* or temporary basis during an emergency, or on a continuous basis; and, any station within the ambit of, and only to the extent not inconsistent with, any directive by the President of the United States issued in conjunction with the President's invocation of the War Emergency Powers.

(c) Requirements for individual to participate in RACES. Any individual may participate in RACES, who, in addition to any requirements as may be duly promulgated by the Secretary of the Department of Homeland Security from time to time:

(1) is listed in the Commission's Universal Licensing System ("ULS") database as the holder of a valid, unexpired amateur service operator license of any class issued by FCC;

(2) is registered with a state or local, government or government-contracted, provider of emergency management, homeland security, civil defense, civil preparedness, public safety and/or fire/rescue services on behalf of a state or political subdivision or special service district thereof, as being duly enrolled as a member of the citizen volunteer emergency response and/or disaster relief component of such entity, as evidenced by periodically updated rosters of such persons maintained by the responsible official of such entity who, for purposes of this Section, shall be referred to as the "Civil Preparedness and Defense Director" of said entity, or by the abbreviation "CPDD;"

(3) meets any additional lawful criteria for such participation established by the CPDD or by the governing political bodies to which the CPDD is responsible.

(d) Procedures for state and local Civil Preparedness and Defense Directors to establish RACES programs. Any CPDD may establish a RACES program by adhering to all of the following procedures:

(1) by creating and maintaining a periodically updated roster of individuals duly registered as enrolled members of the citizen volunteer emergency response and/or disaster relief component of the entity for which the CPDD is responsible;

(2) by providing a certificate or identification card to the individuals so enrolled as RACES unit volunteers, attesting to such status;

(3) by maintaining on file a certificate, in substantially the form prescribed by subsection (e) of this section, attesting to the existence of the RACES unit, with a copy thereof as periodically updated provided to the RACES

Officer described in paragraph (5) of this subsection, and a copy thereof as periodically updated to be filed with the Regional Emergency Communications Coordination Working Group ("RECC") attached to the Department of Homeland Security Regional Office serving the geographic area under the CPDD's jurisdiction;

(4) by undertaking such other actions as will facilitate the rapid, competent and efficient training, activation and utilization of such individuals in times of emergency including, but not limited to, the specific inclusion of the RACES unit in the protocols specified in emergency response plans promulgated and/or followed by the CPDD on behalf of the entity and/or jurisdiction served; and

(5) by appointing, to serve at the pleasure of the CPDD or for such time as otherwise provided by policies established by the jurisdiction served by the entity to which the CPDD is responsible, an individual of good moral character to serve as RACES Officer ("RO") of the RACES program established by the CPDD, and who shall be selected from among the enrolled members of that program. The RO may not be an individual regularly employed by the served entity. The RO shall be the official liaison and chief volunteer administrative officer of the RACES program established by the CPDD, and shall assist the CPDD in development and enhancement of such RACES program, in addition to such other duties and such other authority as the CPDD may lawfully, from time to time, confer upon the RO. The RO shall, to the extent not inconsistent with local law, serve as the executive commanding officer of the volunteers enrolled in the local RACES program during drills and emergency activations, unless the CPDD, or RO under delegated authority conferred by the CPDD, designates another qualified member of the unit to exercise such functions, or withholds conveyance of such authority entirely. The CPDD may likewise appoint or approve the RO's appointment of Deputy RACES Officers from among the enrolled RACES volunteers, to assist the RO in the performance of the RO's duties. Nothing in this paragraph shall be construed as conflicting with or superseding implementation of, and adherence to, the form of *National Incident Management System* protocols utilized by the agency during emergency activations.

(e) Form of certificate attesting to existence of RACES unit. The certificate issued, maintained and filed with the appropriate RECC by the CPDD under paragraph (3) of subsection (d) of this section, should be in substantially the following form:

[NAME/EMBLEM and/or LETTERHEAD OF ISSUING ENTITY]

CERTIFICATE OF R.A.C.E.S. AUTHORITY

BE IT KNOWN that I [name of issuing official], in my capacity as [title of issuing official] of [name of agency], the Civil Defense Preparedness and Defense Organization providing [recite as appropriate: emergency management, homeland security, civil defense, civil preparedness, public safety and/or fire/rescue] on behalf of [name of jurisdiction, political subdivision, municipality or special service district], have established a unit of the RADIO AMATEUR CIVIL EMERGENCY SERVICE (RACES) in order to enhance the provision of auxiliary emergency communications for the safety of the community during times of emergency, and to enhance the interoperability of emergency communications among public safety entities

responding to such emergencies when normal channels of communications are unavailable or inadequate to that task. This Certificate specifies the authority hereby conveyed, as follows:

1.

I have appointed [name, amateur radio callsign] as RACES Officer (RO) of this organization's RACES unit, to act as chief volunteer administrative officer thereof. The RACES unit established by this Certificate is an integral part of the emergency response protocols of this organization and both it and said RACES Officer shall be afforded recognition as such by all employees and volunteers of this organization as otherwise provided for by my direction.

2.

The individuals possessing valid FCC-issued amateur service radio operator privileges, listed on attachment "A" appended hereto as updated by me from time to time, are duly registered and enrolled members of this organization's RACES program and are, consistent with any other stipulations herein provided by me or incorporated by my reference herein, hereby preauthorized to participate in this organization's RACES program to the fullest extent authorized pursuant to 47 CFR Part 97, Subpart E, § 97.407, including but not limited to operation on behalf of this organization during times when the President of the United States has otherwise suspended the Amateur Service under the Emergency War Powers. Said individuals are hereby preauthorized to so communicate during drills with amateur stations participating in RACES, with other amateur stations, and with stations operating under authority of 47 CFR §§ 97.401(a), 97.403 and 97.407; and further, during actual provision of essential communications needs in connection with the immediate safety of human life and immediate protection of property only, when normal communications systems are unavailable or inadequate for such purposes, said individuals are hereby preauthorized to communicate on behalf of this organization with other amateur stations participating in RACES, stations communicating under authority of 47 CFR §§ 97.401(a), 97.403 and 97.405, United States Government stations, United States Military Affiliate Radio System, National Communications System, Coast Guard, Coast Guard Auxiliary, Civil Air Patrol and National Guard and Air National Guard stations, unless the responsible agency to which any such station is attached or which is served by such station has prohibited it from communicating with amateur stations participating in RACES.

[3.*]

*[*Include this paragraph if a primary club amateur station license exists; omit if such club station license does not exist:]* The primary club amateur radio station [insert callsign thereof], licensed by FCC in the name of [insert name of said RACES unit or amateur radio organization designated by CPDD as such unit], is hereby likewise duly preauthorized to participate in RACES to the fullest extent authorized pursuant to 47 CFR Part 97, Subpart E, § 97.407, in the same manner and to the same extent as specified in the preceding paragraph, provided that said station is controlled exclusively by one or more of the individuals specified in the preceding paragraph.]

4 [or 3, if preceding paragraph omitted].

[Recite any additional limitations or stipulations which apply, established by the CPDD or competent authority to which CPDD is responsible.]

This CERTIFICATE of RACES AUTHORITY is effective immediately upon my execution hereof, and shall remain effective in perpetuity until such time as it is rescinded or revoked by me or by my successor, designee or other official imbued with such authority, or until it shall be superseded by operation of law, whichever should occur first.

DATED and ISSUED this [day] day of [month], [year]:

[signature of issuing CPDD]

[Title of issuing CPDD]

Attached: Official roster of enrolled members of RACES unit

Copies: Radio Officer
RECC, DHS Region No. ____

This document was last updated on __/___/___ (mm/dd/yy).

(f) *Ad hoc* establishment and activation of RACES units. The absence of actions by a CPDD to implement in advance the procedures for establishing a RACES unit and pre-authorizing communications by said unit according to subsection (e) of this section, does not prohibit the *ad hoc* establishment, designation and activation of such RACES unit by express directive of the CPDD in the course of an actual emergency. The Commission strongly discourages deliberate reliance upon such *ad hoc* procedures, which may be impossible or impractical to implement once an emergency situation has arisen, and which may lack the degree of security screening for participants otherwise available by compliance with subsection (e) of this section. The following provisions apply to such *ad hoc* establishment and activation of a RACES unit:

(1) In any such *ad hoc* declaration by the CPDD under this subsection, the RACES authority thereby conferred may be conveyed to the *ad hoc* RACES Officer by any reliable and accurate means, need not recite the full particulars enumerated in the *Certificate of RACES Authority* provided for in subsection (e) of this section, and shall be effective as authority for establishment and activation of the *ad hoc* RACES unit to the same extent enumerated in the form of *Certificate of Races Authority* suggested in subsection (e) of this section, as if such certificate had been executed in said form.

(2) The authority thereby conveyed shall be effective, and the *ad hoc* RACES unit activated, for the duration of the emergency event or until such authority is rescinded by the CPDD, or nullified by FCC, the Department of Homeland Security, or as a result of any order by the President of the United States, whichever such event occurs first.

(3) Upon deactivation of an *ad hoc* RACES unit, the *ad hoc* RACES Officer and CPDD each shall file with the Commission and with the appropriate RECC, not later than 60 days after deactivation of the *ad hoc* RACES unit, a report detailing the date, time, duration and reason for *ad hoc* establishment and activation of the RACES unit, and describing the means

by which conveyance of RACES authority was communicated to the *ad hoc* RO, together with a concise summary of the types of communications provided, and types of stations with which communications were conducted, by the unit. A formal log detailing each exchange of communications and/or reciting the callsign of each station with which communications were conducted, is not, however, required in said reports.

(g) RACES participation to be purely voluntary, without compensation. No RO or other RACES unit member shall be compensated in any manner for such service, and no individual employed by the served agency shall participate in RACES as operator of an amateur station participating in RACES in the course of that individual's regular employment with such agency. Provision, however, of insurance coverage or other indemnification offered for illness, death or injury suffered by a RACES member in the course of drills and activations, special attire, agency-issued equipment dedicated to the RACES function, and provision of lodging, vehicle fuel cost reimbursement, meals, *per diem*, awards recognizing meritorious service, commemorative pins, badges, patches, hats, T-shirts and similar items, are neither required nor prohibited by this subsection. This subsection does not prohibit an agency employee from speaking over the microphone, typing on the keyboard, or otherwise uttering communicative information over an amateur station participating in RACES which is under the direct control of a duly authorized RACES unit member.

(h) Bands, modes and frequencies available for RACES operations. Any amateur station participating in RACES in accordance with this section may communicate on any frequency band and segment, in any emission type, to an extent co-extensive with the frequency bands, segments and emission types authorized for the Amateur Service, except as otherwise provided in this subsection.

(1) Unless such individual is subject to contrary restrictions imposed upon that individual by the RO, CPDD or FCC**,** any duly registered RACES unit member may, when providing duly authorized RACES communications in the course of an actual emergency pursuant to this section, operate and control the amateur station over which such communications are provided, to the same extent as would be permitted the holder of an Extra Class amateur service operator license, except as would be inconsistent with the remainder of this subsection.

(2) When communicating with non-Amateur Service stations at any time pursuant to this section, or when communicating with any type of station during suspension of normal Amateur Service operations by order of the President of the United States in conjunction with the President's invocation of the War Emergency Powers, amateur stations participating in RACES shall confine transmissions to the following frequencies; cross-band or split-frequency operation in which the amateur station participating in RACES transmits within the following allocations and receives the transmissions of a non-amateur station on any frequency designated by the other station, however, shall be permitted under such circumstances:

(A) The 1800 - 1925 kHz, 1975 - 2000 kHz, 3500 - 3550 kHz, 3930 - 3980 kHz, 3984 - 4000 kHz, 7079-7125 kHz, 7245 – 7255 kHz, 10.10 – 10.15 MHz, 14.047 – 14.053 MHz, 14.22 – 14.23 MHz, 14.331 – 14.350 MHz, 21.047 – 21.053 MHz, 21.228 – 21.267 MHz, 28.55 – 28.75 MHz, 29.737 – 29.273 MHz, 29.45 – 29.65 MHz, 50.35 – 50.75 MHz, 52-54 MHz, 144.50 – 145.71 MHz, 146-148 MHz, 2390-2450 MHz segments;

(B) The 1.25m, 70 cm and 23 cm bands; and

(C) The channels at 1975 kHz, 3997 kHz, 7255 kHz, 10.125 MHz, 14.333 MHz, 21.267 MHz, 28.725 MHz, 29.5 MHz, 50.30 MHz, 145.71 MHz, 445.520 MHz, and 2425 MHz may be used, subject to any other limitations of this section, for both transmitting and receiving in emergency areas by amateur stations participating in RACES when required to effect initial contact between an amateur station participating in RACES under this section and a station of a United States Military, Coast Guard, Coast Guard Auxiliary, National Guard, Air National Guard, Civil Air Patrol, MARS or NCS unit and, for communications between the respective stations on matters requiring coordination.

(i) Types of communications permitted. All communications transmitted in RACES must be specifically authorized or pre-authorized as provided in subsections (d), (e) and (f) of this section. Only communications of the following types may be transmitted by amateur stations participating in RACES:

(1) Messages concerning impending or actual conditions jeopardizing the public safety, or affecting the national defense or security during periods of local, regional, or national civil emergencies;

(2) Messages directly concerning the immediate safety of life of individuals, the immediate protection of property, maintenance of law and order, alleviation of human suffering and need, and the combating of armed attack or sabotage;

(3) Messages directly concerning the accumulation and dissemination of public information or instructions to the civilian population essential to the activities of the civil preparedness and defense organization or other authorized governmental or relief agencies; and

(4) Communications for RACES training and drills and tests necessary to ensure the establishment and orderly and efficient operation of the RACES unit as ordered or approved by the responsible CPDD.

(j) Hybrid operations. An amateur station or individual duly pre-authorized by a CPDD to participate in RACES under this section may, under circumstances requiring temporary invocation of RACES operation in order to effect the swift, accurate and reliable conveyance of any message or series of messages of the type enumerated in subsection (i) of this section, or in pursuit of the interoperable emergency communications facility intended by this section, invoke the provisions of this section on a message-by-message basis. Under this subsection, a station in a volunteer amateur radio emergency communications unit providing emergency communications for a civil preparedness and defense organization to which it is attached, doing so under non-RACES auspices, may temporarily or momentarily invoke the CPDD's RACES preauthorization previously issued under subsection (e) of this section, and operate as a station participating in RACES in order to pass a single message or series of messages, when temporary resort to RACES operation is necessary in order to effect the swift, reliable and accurate conveyance of such message traffic under the circumstances enumerated in subsections (b) and (i) of this section. The RO and CPDD shall be informed as soon as practicable of any invocation of this subsection, including the time and date, the reasons therefor, the

nature of the message traffic handled, the types of stations with which communications were conducted, and to the extent possible, the frequencies or band segment(s) on which such communications took place. The CPDD shall retain such report in the records of the agency for 60 days and make them available for Commission inspection upon reasonable request by FCC.

(k) Prohibition of routine RACES communications by public agencies. The provisions of this section do not authorize any public agency or any government-contracted provider of emergency or other public services to utilize RACES for the routine and regular provision of that agency's communications. Such regular and routine use, in lieu of the radio services established by the Commission for public safety communications on a day-to-day basis, is expressly prohibited. The intent of this subsection is to reserve RACES communications exclusively for the purposes and under the circumstances specifically and expressly authorized by this section, and limited to the types of communications enumerated in subsection (i) of this section.

3. **The third step the Commission should immediately undertake** relates to amendment of its Rules to improve the verification of an individual's qualifications to operate an amateur station in emergencies, via the examination process.

Specifically, FCC should amend 47 CFR Part 97, Subpart F, to add an element to amateur radio examinations addressing the provision of emergency communications.

Prior to detailing four alternative means of implementing this proposal, this Commenter provides his reasons for requesting the amendment of Subpart F.

Basis for Request

While the subject of emergency communications is currently part of the syllabi and question pools from which questions in all license class examinations are drawn, the treatment of this subject is so cursory as to provide little, if any, assurance that an amateur licensee has the basic knowledge required in order to ameliorate, rather than exacerbate, a communications emergency.

This proposal is tendered because, as occurred in *Katrina*, a disaster may be so severe and extensive that even the best-trained, most ready and highly competent unit of local amateur radio EMCOM responders may be unable to respond owing to the degree of infrastructural damage to housing, transportation routes and methods, the amateur's station equipment, etc. Additionally, a large number of such trained Amateur Service responders may themselves be casualties.

Moreover, those few remaining local amateurs capable of responding may possess no training or experience in tactical and formal emergency message handling, no skill sets in deploying an emergency field station, no field-ready station equipment, no understanding of formal net operations, no training in the Incident Command System ("ICS")/National Incident Management System

("NIMS") protocols, no familiarity with specialized communications techniques including those unique to provision of EMCOM, no awareness of details of local emergency response plans, no comprehension of the appropriate outlets for message traffic, no awareness of the multiple agencies requiring support, no familiarity with the Memoranda of Understanding between and among various disaster response organizations, no credentials attesting to their *bona fides* as legitimate disaster responders requiring admittance into certain zones and areas affected by the disaster or from which response efforts are being coordinated or delivered, etc.

It has been this Commenter's experience in over 30 years of involvement in such endeavors, that fewer than 10% of licensed radio amateurs in any given geographic area are involved in EMCOM to any degree, and that of that 10%, approximately 30% dedicate significant time to participation in training, exercises, response planning and active association with the local Amateur Service EMCOM organization. That experiential observation is borne out by actual statistical data available from ULS and ARES rosters. For example, according to the Commission's ULS database, there are 189 licensed radio amateurs listing their addresses as Oregon City (2006 population est. 28,964; 2000 Census 25,754). An initial mailing to all such amateurs by John Williams WB7SJL in October, 1997 announcing a December, 1997 organizational meeting of the newly established Oregon City ARES/RACES unit formed on request of then-Fire Chief Jim Davis, produced an initial attendance of 70 of those radio amateurs. The next several meetings were attended by approximately 30. Six months after its inception, a dedicated core of 13 local radio amateurs – mostly newly-licensed Technician Class licensees – remained as fully active, regular participants in the unit's programs over the next few years. (But as will be seen below, the overall active ARES participation is approximately 3%; CARES data provide a listing of those who have completed one or more level of the ARECC course, as well, which is discussed below, also).

In the City of Portland, Oregon (population within city limits 538,180; metro area 1.95 million, per Census Bureau) there are, according to ULS, 2471 licensed radio amateurs. The number of those who are regularly and actively involved as participants in ARES/RACES hovers at fewer than 80 (03.2%).[14]

In West Linn, Oregon (population 22,261), a very affluent community directly across the Willamette River from Oregon City (and connected thereto by a narrow, seismically-questionable, gunnite-encased suspension bridge declared the "Most Beautiful Bridge in America" by the American Association of Architects – *in 1922*), there reside only 91 licensed radio amateurs, according to ULS. Of that number, three have expressed putative interest in EMCOM over a period of nine years of recruitment. Of that number, one could be counted upon by Jeff

[14] ***SOURCE:*** Personal conversation with ARES Emergency Coordinator for Multnomah County, August, 2005.

Rubin, former Emergency Manager of East Division, Tualatin Valley Fire & Rescue (TVF & R), provider of fire/rescue services to the City of West Linn, who ultimately abandoned efforts to establish an ARES/RACES unit dedicated to serving that city.

Mr. Kidd (KA7OZO, CARES EC) has had slightly better success regarding West Linn recruitment, but the bottom line is that of 1,208 licensed radio amateurs spread among the eleven major towns in Clackamas County,[15] only 50 deemed competent (and/or even permitted) to do so, would be available to respond in a major event affecting a minimum population of 368,470 – assuming those qualified radio amateurs, themselves, had survived and were otherwise capable of so responding.[16] In other words, *this yields a total of 50 potentially*

---

[15] ULS and the Census Bureau provide the following data for the eleven major towns in Clackamas County (served by ARES group CARES): **Boring:** 66 individuals holding active Amateur Services licenses (2000 pop. 12,851); **Canby**: 81 licensees (2000 pop. 12,790); **Estacada:** 54 licensees (2000 pop. 2,371)**; Gladstone:** 27 licensees (2000 pop. 11,438); **Lake Oswego:** 163 licensees (population 35,728); **Milwaukie:** 279 licensees (2000 pop. 20,490); **Molalla:** 49 licensees (2000 pop. 5,647; est. pop. July, 2005: 6,737 – net change +19.3%); **Oregon City:** 189 licensees (2005 est. pop. 28,407); **Sandy:** 147 licensees (2000 pop. 5,385); **West Linn:** 91 licensees (2000 pop. 22,261); **Wilsonville:** 62 licensees (2000 pop. 13,991; est. 2003 pop. 28,407 – net change +9.6%); **TOTALS: 1,208 Amateur Services licensees in a combined city population within Clackamas County of 164,604 (total County population per 2005 Census Bureau estimate = 368,470).** This Commenter did not continue beyond these data by for the listed cities, by searching ULS for the number of Amateur Service licensees in every remaining zip code in Clackamas County, because based on the size of the sample actually analyzed (44.67% of the County population, and 163,604 above the number considered adequate for a valid demographic statistical sample), doing so would not have significantly altered the yielded conclusions, according to generally accepted demographic statistical analytical principles.

[16] The CARES web site www.clackamasares.org lists a roster of 44 "certified members," the minimum requirement for "certification" being to have completed the ARECC Level One course. A State of Oregon RACES "Yellow Card" requires completion of the Level Two ARECC course, and consideration for inclusion in an "ARES-MAT" (mutual aid) team requires, *inter alia*, completion of the ARECC Level Three course. Nonetheless, a few members are rostered as "certified" notwithstanding not having completed the ARECC course at any level; those members have completed FEMA-level Incident Command System ("ICS") courses 100, 200 and/or 700. Limited certification is also available as a traffic-handling station to those who handle 25 formal NTS messages per year, and other requirements enable one to procure "packet radio certification." Members who have not yet completed any of those courses or requirements, regardless of equivalent knowledge, training and experience, are not "certified" and will not be called out on missions unless the roster of "certified" members is exhausted. All rostered non-certified members are deemed "resource members." Resource members may be issued a "White Card" identifying them as CARES members upon otherwise meeting

available, presumptively EMCOM-competent ARES/RACES responders to serve a County with a population of 368,470 (2005 Census Bureau estimate), spread among eleven separate cities likely to be isolated from each other due to bridge damage, blocked/destroyed roads, etc.

Furthermore, because the number of Clackamas County licensed radio amateurs is *in excess of the 2,108 figure* (since only the ULS data for the eleven significantly-populated towns recited in footnote 16, *supra*, were included in the analysis), the percentage of Clackamas County radio amateurs deemed minimally competent in EMCOM is something less than the 02.3% derived from dividing the 50 CARES/OCARES/OCDS responders aforementioned (*see*, details recited in footnote 17, *supra* and *infra*) by the figure representing the aggregate number of licensed radio amateurs recited in those towns in the ULS (2,108). Those fifty, in turn (provided they survived the incident and were otherwise capable of responding) would do so in aid of a Clackamas County population of 368,470, or as part of a contingent of *only 130 EMCOM-competent radio amateurs (03.5% of 3,679 licensees) in the Portland Metro area plus Clackamas County with their 1.99 million residents*.

---

minimum requirements such as attending six monthly meetings per year, checking into the weekly radio net twice per month, and participating in at least one public service activity annually. Both "resource" and "certified" members may, upon clearing Sheriff's Office background check, be duly registered pursuant to state statute as "Emergency Services Workers" and be issued Sheriff's Office identification as such, provided those other group requirements are kept current. Both White card and Yellow Card holders must also maintain CPR and First Aid certification. Resource members who have not fulfilled those minimum requirements, or who are under 18 years of age but at least 16 years of age, may still participate in CARES but will not be issued the foregoing identification and will be utilized in limited support roles in drills and activations. Accordingly, for purposes of calculating the maximum number of ARES/RACES members available to respond in Clackamas County (which includes, *inter alia*, the eleven towns recited in footnote 15, *supra*), this Commenter has counted in that total the 44 "certified" members enumerated on the CARES web site, and added thereto six additional OCARES/OCDS members who are very active but for one reason or another (such as refusal of local ARECC Certified Examiners to administer ARECC examinations at local VEC sessions as is claimed to be available by ARRL; *see*, footnote 19, pp. 40-41, *post*) are not on the CARES list of "certified" members, but who are registered Sheriff's Office and Oregon City Police Dept. Emergency Services Workers and would be eligible to respond for purposes of serving Oregon City; one member with similar status with the City of Gladstone has also been so added to the total.. ***This results in a total Clackamas County number of 50 available, presumptively EMCOM-competent ARES/RACES responders to serve a County with a population of 368,470 (2005 Census Bureau estimate), spread among eleven separate cities likely to be isolated from each other due to bridge damage, blocked/destroyed roads, etc.***

The aggregate size of sampled populations is well in excess of that necessary upon which to generalize analytical results.

The experiences in these local communities are recounted in order to take into account "the susceptibility of a region to a particular type of disaster," as requested in the Commission's NPRM. Oregon City, as noted *ante*, is so uniquely susceptible both to seismic events and to particularly catastrophic *sequelae* therefrom, that it was selected as the model "scenario city" upon which FEMA based a multi-day Emergency Management training seminar in Washington, D.C. in 1998, attended by Emergency Management personnel from throughout the nation.[17]

Oregon City (pop. 28,407), the County seat of Clackamas County, will become geographically isolated when such an earthquake next occurs. It is separated from downtown Portland, Oregon, ten air miles to Oregon City's North, by the Clackamas and Willamette Rivers. The latter river separates Oregon City from the City of West Linn. To the South, Oregon City is separated from the small town of Canby by ten linear miles of two-lane highway (State Hwy 99E) frequently partially obstructed in the absence of seismic events, by boulders which have dislodged from the 300+ foot bluff running adjacent to said highway. Access to and from the state Capital, Salem, Oregon, 30 air miles to the South of Oregon City, will be impractical or impossible by either the Hwy 99E route or via Interstates 205 and 5, which will be inaccessible due to the necessity of passing through a downtown area consisting of century-old brick and masonry buildings which will be completely destroyed in the seismic event. In March, 1993, a Richter Scale 5.6 earthquake with a deep epicenter roughly 20 miles South of Oregon City caused the undersigned to be thrown from his bed, and subsequent inspections of house basements personally conducted by the undersigned along an East-West line extending from one block East of the home the undersigned then occupied, thence West along a known fault line passing beneath the Senior High School through the city's most densely populated neighborhood, revealed large cracks in the foundations of each and every home inspected, which the homeowners verified were inflicted by that relatively minor "Spring Break Quake."

---

[17] ***SOURCE:*** Captain Ken Dawson, formerly of now-defunct Oregon City Fire Department, now an emergency response technical resources official for TVF & R in Aloha, Oregon, who served as Oregon City' first city liaison/advisor to Oregon City ARES/RACES and OCDS. Capt. Dawson attended the FEMA seminar and related to the undersigned and others, in the course of a multi-media presentation, the predicted cataclysmic property damage, conflagrations, loss of communications, and massive human casualties to be suffered by Oregon City in the event of a Richter Scale 6.0 earthquake, an event considered highly likely to occur at any time by geologists. These data were related by Capt. Dawson to student/trainees in the *Neighborhood Emergency Response Team* ("NERT") Academy conducted by Capt. Dawson in the spring of 1998.

The immediate metropolitan area is also vulnerable to tsunami disasters, owing to downtown Portland's 50-foot elevation above sea level (Portland International Airport is at 20 feet ASL), its location situated on the Columbia River 78 air miles inland from the Pacific Ocean, and its relative proximity to undersea epicenters of seismic events associated with the *Cascade Subduction*, the convergence of two of Earth's tectonic plates, one of which is sliding under the other, a geological phenomenon also responsible for the volcanic activity of the Cascade Mountain Range, the most recent notable manifestation of which was the catastrophic explosive eruption of Mount St. Helens on May 18, 1980.[18] Geologists have often warned that the region is long overdue for a "subduction zone earthquake." When that event occurs, it is predicted to be of an almost unfathomable Richter Scale 9.0 magnitude, with such energy released that it is further predicted that the event will cause a slab of the Earth's crust over three-hundred miles long (North-South) and 50 miles wide, extending from North of Seattle, Washington to Mid-Northern California, to suddenly drop ten feet in elevation.

It is safe to predict that, when this event occurs, the last concern on the minds of any surviving radio amateurs will be whether operating an amateur

---

[18] Two radio amateurs, RACES volunteers Jerry Martin, W6TQF and Reid Blackburn KA7AMF, and the wife of one, were vaporized by the energy wave and wall of ejected molten exudate moments after the blast. One amateur continued to transmit, cut off in mid-sentence as he described the approaching wall of death. The three had been stationed at two different observation posts, providing data to the United States Geological Service via the 2-meter amateur band, and one was likewise providing reports relayed on the amateur 80-meter band, to amateur EMCOM volunteers via the *Washington Public Service System Net*. Soon thereafter, a dam was breached by the wall of mixed ash and mud that rushed down the Toutle River, destroying several homes, large sections of roadways and communications and electrical infrastructure, creating the first major phase of the civil emergency arising from the eruption, in which the top two-thirds of the peak had been converted to lava, airborne missiles and fallout. Radio amateurs performed valiantly in this emergency, in the absence of a regional emergency communications plan. (*See,* Epilogue, Section VII of these *Comments*, for full description of the Amateur Radio response to the Mt. Helens disaster). Thereafter, ARES veterans of the Mt. St. Helens emergency, such as Roger McCoy W7ADV, Wes Allen K7WWG and many others convened under auspices of the American Red Cross and drafted a comprehensive communications plan which served as the model for the Oregon ARES District One EMCOM Plan still in existence over a quarter century later. That plan served well for many years, but as noted in this Commenter's remarks herein related to the *Quakex '03* exercise, it has become obsolete and is no longer capable of handling the EMCOM traffic which will ensue in a major incident, owing to changes in the paradigm under which public agency emergency services are provided. **It is hoped that by mentioning this critical problem in these Comments, current ARES/RACES leaders and regional Emergency Managers will be prompted to finally take actions addressing the deficiencies brought to light during *Quakex '03*. *See,* these *Comments* at pp. 12-13, *ante*.**

station with an expired license might result in a Commission investigation, or whether any means of radio communication resorted to in order to summon aid to the decimated populace is in a transmission mode not authorized on a particular frequency band absent FCC approval of Special Temporary Authority ("STA"). Rather, the primary concern will be whether such radio amateurs as are capable of responding have the knowledge, training, experience and skill sets necessary in order to summon such aid and to effectively and efficiently assist the multitude of agencies engaged in rescue and relief operations with interoperable communications capability via the Amateur Service.

From the statistics aforementioned, assuming that 100% of the radio amateurs possessing such competence survive the event, retain operable equipment, and are able to respond, retain operable equipment, and are able to reach deployment and/or staging areas, we may then (under such utterly unrealistically favorable human conditions) expect a combined total contingent of (counting the 50 active, presumptively EMCOM-literate/skilled/competent members of CARES and OCARES/OCDS – *see* footnote no. 1, page 11, and footnotes 16 (pp. 35-36) and 17 (p. 37) of these *Comments, ante*) a maximum of approximately 130 ARES/RACES unit members will be available to provide emergency communications in an area populated by approximately two million persons. Of course, we may not realistically expect anywhere near that number of active ARES/RACES volunteers to be able to provide EMCOM in the wake of this event, meaning that EMCOM will be provided by an unknown surviving number among the 96.5% comprising the approximately 3,549 resident radio amateurs lacking any experience or training in that function whatsoever.

While the undersigned reposes immense faith and confidence in the abilities, fortitude, creativity, skill, courage and dedication of his esteemed fellow radio amateurs, it is evident to him that in disasters of horrific magnitude – or of lesser gravity – the degree to which the Amateur Service will be capable of providing the essential communications interoperability *for which it is the best suited of any communications service,* under conditions of severe infrastructural damage and chaos, will necessarily be *directly proportional to the degree to which competency in the provision of that facility is ubiquitous among the surviving and otherwise available amateur radio populatio*n. Given the percentage of radio amateurs possessing such knowledge under the present, *purely voluntary* paradigm of education therein, the ineluctable conclusion is that *the purely voluntary paradigm must be abandoned*. Indeed, the mandate of § 97.1, defining the "basis and purpose" of the Amateur Service, is not being appropriately shepherded by the current license examination construct which substantially omits from its purview the very first enumerated basis and purpose of the Service, which is "[r]ecognition *and enhancement* of the value of the amateur service to the public as a voluntary noncommercial communications service, *particularly with respect to providing emergency communications*." 47 CFR Part 97, § 97.1, subsection (a) (emphasis added).

It is further emphasized, that paragraph (c) of that section states as a basis and purpose of the Amateur Service *"[e]ncouragement and improvement* of the amateur service *through rules* which provide for *advancing skills* in both the *communications* and technical phases of the art." [Emphasis added.]

This proposal for amendment of Subpart F *directly relates* to the Commission's declared duty to *advance radio amateurs' skills in the communications phase of the radio art*, in order to *enhance and improve* the Amateur Service.

This Commenter anticipates amateur radio community resistance from some quarters to this proposal, and accordingly provides a brief overview of the existing EMCOM training paradigm with a view toward preempting some of the expected resistance (although this Commenter by no means expects resistance to this proposal to be unduly prevalent, once the proposal is fully explicated)

Without question, the most significant advance in the history of Amateur Service EMCOM training has been the tremendous initiative of ARRL in establishing its *Amateur Radio Emergency Communications Courses* ("ARECC"). Under ARECC, radio amateurs *voluntarily* enroll in one or more in a progressive series of three courses of increasingly detailed content, covering the emergency communications function. ARRL has made participation in ARECC as accessible and affordable as reasonably possible, by conducting the courses online with the matching of students with online mentors, by providing for "hybrid" courses in which material is covered in a classroom setting and reviewed online in an accelerated fashion, and by providing for purely auto-didactic study. The online courses utilize online testing, hybrid courses utilize in-class testing with submission of examinations via the Internet, and individuals opting for self-study may purportedly[19] obtain certification of having passed a course by taking the course final examination at a Volunteer Examiner ("VE")-conducted amateur license testing session conducted under auspices of the ARRL VEC. The course fees are minimal – $35 per course – and ARRL has successfully obtained

---

[19] The adjective "purportedly" is used because, as a practical matter, this Commenter has found it impossible to sit for an ARECC examination at a VE testing session. The undersigned has corresponded directly with each of the eight Portland, Oregon Metropolitan-area ARECC "Certified Examiners" listed as such on ARRL's ARECC World Wide Web ("WWW") site, inquiring as to the possibility of three of them administering ARECC Level One, Two and Three certification examinations at one or more of the frequent local VE testing sessions. Not one of the eight has ever responded to the undersigned's inquiries. Inquiries to ARRL regarding this issue produced replies that the undersigned should look up on the League's WWW site the identities of ARECC Certified Examiners in his area and contact them – which had already been done. In short, there is apparently no motivation on the part of the local ARECC Certified Examiners to administer ARECC certification examinations at local area VE testing sessions, and apparently no intention by ARRL to actually implement or promote this method of attaining ARECC certification.

several grants under which students taking the course online or via the hybrid option, have had their course tuition refunded upon successful completion of a level the course. ARRL has prepared well-written texts and workbooks covering course materials, and has published a reasonably priced *Emergency Communications Handbook* covering the same material as the ARECC courses. To date, thousands of hams have partaken of ARECC, and several ARES units and local governments have begun to require ARECC certification at one or more level as a prerequisite for performance of various functions by ARES/RACES members. *See*, for example, the various permutations of such requirements adopted by CARES, recited in footnote 16, p. 36 of these *Comments*, *ante*.

From the foregoing recitation, one may be tempted to inquire *"If it ain't broke, why fix it?"*

In response to that understandable question, this Commenter first replies that he does not seek to undermine, abolish or render irrelevant, this highly-acclaimed and increasingly utilized education and training program. On the contrary, it is submitted that adoption of the proposal to be detailed *post*, would have quite the opposite effect: *prospective licensees and licensees seeking license class upgrades would have even greater incentive to enroll in ARECC.*

It is hereby proposed that FCC provide for an additional examination element entirely separate from those currently codified as prerequisites for issuance of an amateur service operator license, *devoted entirely to the subject of public service and emergency communications*. The question pool and syllabus for this new element should be substantially based upon the scope of material covered in the ARECC courses.

The cogent – and, it is submitted, irrefutable –argument in favor of this proposal is presented after the following detailed explanation of that proposal.

First Alternative Approach

Under this Commenter's preferred manner of implementing the proposal, examinees for a Technician Class license would, in addition to the currently required written examination be required to take and pass an additional examination sub-element covering subject matter generally equivalent to that covered in the ARRL's Level One ARECC course. General Class examinees would be required to take and pass, in addition to the currently required written examination, a written examination sub-element covering subject matter generally equivalent to that covered in the ARRL Level Two ARECC Course. In similar fashion, Extra Class examinees would be required to take and pass such an additional examination sub-element coextensive with the subject matter covered in the ARRL's Level Three ARECC course.

Additionally, it would not be necessary that an amateur license applicant pass the new element at the same examination session in which the existing written element were administered, and a *Certificate of Successful Completion of Examination* (CSCE) would be issued by the VE team to an examinee who passed one or more of the three new elements at a VE examination session, regardless of whether the examinee sat for or passed the currently existing written examination element for any class of license*. The CSCE would be of indefinite duration.*

Finally, credit for each of the new examination elements would be provided to any license applicant who presented to the VE team certification of successful completion of the level of ARECC course corresponding to the new EMCOM examination sub-element for each class of license.

Application of the new sub-element requirements would be entirely prospective; *i.e.*, a person holding a class of amateur license would continue to hold that class of license without necessity of ever passing the new element. If, however, that licensee chose to upgrade to a higher class of license, passing the new sub-element applicable to (1) the currently-held class of license; (2) the level of license applied for; and (3) if applicable, the interim level of license between that held and that sought, would be required. This is little different from the current requirement that an applicant for a particular class of amateur license pass all elements required for license classes below the class of license sought, prior to being examined for the license class sought.

The undersigned presents his argument in favor of this proposed rulemaking *post*, after describing three other alternative methods of implementing this proposal.

Second Alternative Approach

A suitable alternative to the specific proposal recited above, would be to amend Subpart F to provide for a single new examination element – without sub-elements tailored to each license class – covering the entire range of EMCOM training and education material substantially as contained within all three of the ARRL's three ARECC courses, and providing that all individuals, in order to obtain a first grant of amateur license, or if already licensed, upgrade to new class of license, pass the new licensing element. Again, the new element requirement would be applied prospectively only, license applicants would receive credit for proof of successful completion of (under this alternative) all three levels of the ARECC course, and CSCEs of indefinite duration would be provided to individuals who passed the new examination element but did not sit for or pass all other examination elements required for a particular license class.

The undersigned notes a potential disadvantage of this second alternative: it would entail, of necessity, a written examination more numerous in questions,

and covering substantially more study material, thereby potentially deterring would-be newcomers to the Amateur Service from undertaking preparations for examination for the Technician Class license (the elements of which must, under Subpart F as currently provided, be passed in order to obtain any class of amateur license). One advantage of this alternative, however, is that a prospective licensee could first merely study for the new element, sit for and pass the examination for the new element, (or, in the alternative, enroll in and pass all three levels of the ARRL ARECC course), and not be deterred from upgrading to a higher class of license by the prospect of additional study beyond that already required for such upgrades.

There are examples of analogous licensure requirements following the paradigm of this second suggested alternative. One is the typical set of prerequisites in most states for admission to the Bar, in which, prior to submitting an application for admission and sitting for the state Bar examination, the potential lawyer must first take and pass an entirely separate written examination on legal ethics, which is uniform throughout the United States. The applicant need take and pass that component only once, may take it multiple times if necessary in order to achieve a passing score, and once the component has been passed, the applicant need not take it again even if multiple attempts to pass the Bar Examination ensue thereafter.

There is a great deal of congruity in that analogy: in the practice of law, one's basic comprehension of ethical vs. unethical conduct is a prerequisite to attaining the privilege of a license to practice law, and demonstrating comprehension of the substantive and procedural law itself, in all of its technical facets, is of no consequence if one lacks the basic moral compass to practice the profession in an ethical manner.

Similarly, all of the technical, theoretical, mathematical, and regulatory knowledge one could possibly possess regarding the Amateur Service and physics of radio communication does not provide any indication whether the putative licensee has concomitant comprehension of the actual *communication phase* of the art *viz*. EMCOM.

Third Alternative Approach

A *Third Alternative Approach* would be to simply increase the number questions for each license class examination beyond that currently existing, with the entirety of the increase devoted to EMCOM, message handling, and public service communications operations and procedures. The undersigned disfavors this approach because an applicant would know in advance from the syllabus how many questions from that portion of the question pool would be devoted to

this subject, and thereby be able to evade mastery of the subject if the applicant were able to "ace" the remainder of the examination topics.

Fourth Alternative Approach

A *Fourth Alternative Approach* – endorsed by the undersigned as a less desirable, but acceptable option in lieu of the *First Alternative Approach* – would be the same as the *First Alternative Approach* except that, rather than dividing the questions for each license class under the applicable sub-element into "basic," "intermediate" and "advanced" message handling, net and emergency communications techniques and procedures corresponding generally to the subject matter contained within ARECC Levels One, Two and Three respectively, instead providing (as is currently the case with regulatory questions with regard to each license class examination) that any question pertaining to subject matter generally conforming to that contained within any and all levels of the ARECC curriculum, may appear in the sub-element examination corresponding to each set of license class qualification requirements.

This *Fourth Alternative Approach* has the advantage of ensuring that applicants would comprehensively study the EMCOM subject matter. *It is recommended that, under this fourth alternative approach, an applicant be permitted to sit for one, two or all three of the EMCOM sub-elements, at any VE session, regardless of whether the applicant sits for or passes any other elements corresponding to any particular class of license.*

As in the case of the other three suggested alternative approaches: **(A)** credit would be provided for proof of successful completion and passage of final examination of any level of the ARRL's ARECC course; **(B)** an examinee would be issued a CSCE of indefinite duration upon sitting for and passing any of the new sub-elements; **(C)** the new element would be required prospectively, only.

This Commenter favors the *First Alternative Approach* because it addresses all major, relevant permutations. For example, a Technician Class licensee requiring Level Three-equivalent ARECC certification in order to perform a particular ARES/RACES function in the licensee's jurisdiction could simply take and pass the applicable new sub-elements at one of the frequently-held VEC examination sessions in the licensee's community.

Syllabi & Question Pools

As for the syllabi for the new sub-elements, it is recommended that they be broken down into the categories represented by the chapter headings contained in the ARRL's *Emergency Communications Handbook*, with additional sub-topics covering in greater detail aspects of net operations and procedure, ICS/NIMS, and formal and tactical message handling. Of course, it is expected that such syllabi and the attendant new Question Pool(s) will be formulated by

the *National Conference of Volunteer Examiner Coordinators*, as currently provided for by the Commission's existing Rules.

Tabular Explanation of Proposal

Set forth below in Tables 1, 2 & 3 are examples of how the new EMCOM examination element/sub-elements would be incorporated into the license qualification and examination structure under the *First Alternative Approach*. (To apply them to the *Fourth Alternative Approach* also embraced as a lesser desired but acceptable option by this Commenter, simply omit the modifiers "Basic," 'Intermediate" and "Advanced" from the descriptions of the sub-elements).

Table 1 incorporates the new examination element/sub-elements into the table of elements already required for issuance of an amateur operator license (*cf*. § 97.501); the new element/sub-elements are referenced therein as "Element 2 (B)," 2(C)" and "2(D)," with currently existing Element 2 re-designated as "Element 2(A)."

Table 2 applies to the *First Alternative Approach* in describing the subject matter of the new sub-elements; omit the modifiers "Basic," "Intermediate" and Advanced" from the table in order to apply it to the *Fourth Alternative Approach* also conditionally endorsed by this Commenter.

Table 3 details the number of questions and passing scores suggested for each of the new sub-elements under the *First Alternative Approach*; again, omit the modifiers "Basic;" "Intermediate" and "Advanced" to apply Table 3 to the *Fourth Alternative Approach* also conditionally endorsed by this Commenter.

Table 1

Incorporation into Existing Licensing Scheme

EXTRA CLASS OPERATOR: Elements 1, 2(A), 2(B), 2(C), 2(D), 3(A), 3(B), and 4;

GENERAL CLASS OPERATOR: Elements 1, 2(A), 2(B), 2(C), 3(A) and 3(B);

TECHNICIAN CLASS OPERATOR: Elements 2(A), 2(B) and 3(A).

Table 2

Explanation of New Element 2 sub-elements:

Element 2(A): Amateur station operating procedures, generally

Element 2(B): Basic message handling, net and emergency communications techniques and procedures, and incident management systems

Element 2(C): Intermediate message handling, net and emergency communications techniques and procedures, and incident management systems

Element 2(D): Advanced message handling, net and emergency communications techniques and procedures, and incident management systems

Table 3

Construct of Questions in Element 2 sub-elements (*cf.* § 97.503(b)):

Element 2(A): As currently provided in Element 2.

Element 2(B): 30 questions concerning basic message handling, net and emergency communications techniques and procedures, and incident management systems. The minimum passing score is 22 questions answered correctly.

Element 2(C): 35 questions concerning intermediate message handling, net and emergency communications techniques and procedures, and incident management systems. The minimum passing score is 26 questions answered correctly.

Element 2(D): 50 questions concerning advanced message handling, net and emergency communications techniques and procedures, and incident management systems. The minimum passing score is 37 questions answered correctly.

Argument in Favor of Proposed Amendments to Subpart F

It is anticipated that some would object to having to sit for an examination element applicable to a license class already held, simply in order to upgrade to a higher class of license. *The reason for such a requirement is simple: the provision of emergency communications has become the single most important aspect of the Amateur Service and the one which most effectively justifies its existence.* This proposal does not entail revoking already-held privileges in the event of an applicant's failure to pass the new element applicable to the class of license already held by an examinee sitting for a higher class of license.

Adopting this proposal would ensure that all future amateur service licensees, and those seeking to upgrade privileges, have studied and become learned in the specifics of emergency communications, message handling and incident management systems which at present are barely (and, in some respects, not) touched upon in the licensing process, yet which constitute the single most vital body of knowledge essential to achieving the paramount mission that Congress and the Commission have assigned to the Amateur Service — providing effective, resilient and interoperable emergency communications for the purpose of saving life, preserving property, and ameliorating human suffering.

At present – without ability to cross-reference ARES and ARECC databases – it is not possible to state how many non-ARES-active amateurs have partaken of the ARECC courses, but it is a logical and safe assumption that the overwhelming bulk of ARECC students are ARES-active (this inference is

easily and permissibly drawn from the previously recited statistical estimates regarding overall active ARES participation among a representative demographic sample of licensed radio amateurs within an area of 1.99 million general population. In fact, it is highly likely that the percentage of ARECC students who are not ARES-active is significantly less than 4%, since the period of time required to take the online courses – which all but a few choose as the method of certification – spans eight weeks, with significant off-line hours required between weekly online reporting and submission of homework, an expenditure of personal time in substantial excess of that required in order to simply be an active ARES volunteer). Applying a very liberal assumption – for purposes of reaching a conservative result – that as much as 10% of the ARECC student subpopulation is not ARECC-active, will not significantly affect the yielded presumptive inference that *96+% of the radio amateur subpopulation of the United States lacks significant training and experience in EMCOM*.

A paradigm for determining the qualifications of an individual to hold an Amateur Service license which produces a population of more than 435,000 licensed radio amateurs, 96% of whom are functionally 'EMCOM-illiterate,' is *ipso facto* contrary *per se* to the basis and purposes of the Amateur Service enumerated in § 97.1. Indeed, the ARRL's creation of the ARECC courses itself is evidence of a need for such training which has not been produced as a result of the current license qualification paradigm.

Adoption of this proposal would also resolve the problem of Certified Examiners failing or refusing to participate in administration of the ARECC Certification Examinations at VEC Examination sessions (*see,* example recited in footnote 120 p. 40 of these *Comments*, *ante*).

Further, a group of EMCOM-active radio amateurs has already formed a private organization styled as a "National Registry" of amateur radio emergency communications responders. The group anticipates increasing adoption nationwide of minimum qualifications for participation by radio amateurs in official EMCOM functions. The group has stated that maintenance of current registration status would require compliance with certain proof of competence to be submitted on a biennial basis. The details of such qualifications are unknown at this time, but clearly the group intends that its nascent "registry" will, as in the case of the *National Registry of Emergency Medical Technicians*, become the *de facto*, if not *de jure*, standard for determining the qualifications of an individual to fully perform the EMCOM functions attendant to any type of emergency arising in any part of the United States. While such an approach is attractive in that it resolves several issues, including the ability of any "Registry-listed" radio amateur to deploy in any jurisdiction in the country which recognized the Registry, such an approach will have the negative effect of imposing requirements of an ongoing nature that will serve as a deterrent to increasing the already abysmally small percentage of licensed radio amateurs capable of performing the EMCOM function. This Commenter does not adopt any position

with regard to the "National Registry of Emergency Communications Responders" concept other to state that it is and should remain a privately-promoted endeavor not comprising any component of Commission policy or rulemaking. The Commission's mandate pursuant to the Communications Act and espoused in §97.1 is, *inter alia*, to improve the ability of radio amateurs to provide emergency communications through rulemaking that enhances the Amateur Service's licensees' competence in the communicative aspect of the radio art. The adoption of license examination topics which ensure the minimum qualifications of an applicant to be issued an Amateur Service license therefore must adequately encompass examination topics testing the applicant's comprehension of subject matter essential to performance of EMCOM functions. This is an entirely separate issue from the minimum participation requirements promulgated and adopted by public agencies and various ARES/RACES units. Because of the likelihood that a significant portion of the existing 4% of EMCOM-competent amateurs in an affected area will not be available to respond in the wake of a major incident, it is imperative that the Commission ensure that those from among the remaining (currently non-EMCOM-competent) 96% who must therefore fill the gap, have the competency to do so. The creation of a "National Registry" will do little, if anything to effect this seminal change.

Currently, a successful applicant for any class of amateur license – *if so motivated* – must undertake additional, voluntary study, research and mentoring in order to learn such a basic task as how to compose a formal written message. One need merely spend a few hours listening to HF traffic net operations – including, unfortunately many ARES-affiliated ones – to conclude that a significant segment (the aforecited statistical exercise would suggest at least 96%) of the amateur population (including, based upon empirical research by the undersigned, a majority of the typical "net members") do not posses the knowledge and skills sets necessary to efficiently, accurately and effectively handle substantial amounts of emergency message traffic under actual disaster conditions. Because it is known that most ARES members are of Technician Class (and thus, in most instances, lacking HF privileges on the bands in question – 80 and 40 meters), such empirical evidence derived from routine HF traffic net operations cannot support the presumptive conclusion that perhaps 50% of ARES-active amateurs lack competency in net operations. But considering that such empirical observations include those of both ARES HF net operations conducted in the course of drills and actual emergencies, and VHF/UHF ARES net operations, this Commenter is confident in positing a rebuttable presumption that indeed such a percentage applies.

A brief review of the recent history of the last two decades of telecommunications advances by radio amateurs and otherwise, brings into focus the reason adoption of the proposed amendments to Subpart F are necessary and desirable.

As recently as a decade ago, an amateur operator seeking such knowledge and skill sets could simply begin by participating in the voice and

Morse code traffic nets conducted under auspices of the ARRL's National Traffic System (NTS), and in fairly short order become expert in message handling, owing to the shared expertise of "old timers," the nearly round-the-clock scheduling of high frequency NTS traffic nets, the camaraderie typical among such operators, and the voluminous amount of third-party traffic in demand of skilled operators in order to be passed anywhere in the nation or abroad far more quickly than could be accomplished by postal services.

Two decades ago, an innovation made practical by radio amateurs – "*packet radio*" – came onto the scene and was rapidly embraced. Within five years, digipeaters and nodes had been established so ubiquitously that it became possible for radio amateurs to send error-free written communications from nearly anywhere in the United States to any other location in the nation, originating from one amateur's computer keyboard and transparently being stored and forwarded via the vast packet radio networks to the intended destination, all without intermediate human intervention. Shortly thereafter, amateur radio satellites were placed into orbit dedicated to this exhilarating new communications application. An operator then could compose a message destined for an addressee in the other hemisphere, send it to the local packet radio bulletin board system ("PBBS"), and walk away. At the appropriate time, when an amateur satellite carrying packet radio store-and-forward capability was within line-of-sight of the PBBS, the amateur's message would be automatically uploaded to the satellite, stored on board, and automatically downloaded to the PBBS mailbox of the addressee on the other side of the world. With the Internet boom which has since occurred, such communications seem blasé. Yet it was then an astounding achievement which remains a valuable resource provided by the Amateur Service, and demonstrates the manner in which technological innovations embraced by amateurs often presage the future of communications for the public at large.

NTS and ARES both embraced packet radio, establishing protocols for its use for both routine and emergency formal traffic. While representing a particular boon to ARES operations – an especially long message containing highly specialized terminology of difficult spellings, such as lists of pharmaceuticals required by a field hospital in a disaster zone, could now be sent error-free without expenditure of large segments of time passing the message via voice or Morse Code – packet radio was a harbinger of the severe decline of NTS. It was simply more convenient for amateurs lacking interest in net operations *per se*, to type and send off a message via packet radio, than to adjust a personal schedule in order to be available at a pre-designated net time in order to check in, list traffic, wait in queue, change frequency, and originate a message which owing to the nature of real-time net operations, must necessarily be limited generally to 25 words or less. The packet radio alternative introduced a new paradigm into message handling: *time-shifting*.

Ten years into the packet radio phenomenon, the Internet broke out from its shadowy ivory tower existence into the mainstream. It requires no recitation here in order to illuminate the pervasiveness of this medium in contemporary society. In 1989, this Commenter was part of an Oregon amateur radio delegation which traveled to the former Soviet Union for the first *Friendship Radiosports Games*. As recently as those few years ago, all coordination with our Soviet colleagues had to be conducted by means of amateur radio, on weekly 20 meter band schedules, between Khabarovsk, Russia and Portland, Oregon, with a bi-lingual radio amateur in California providing translation. Today, our Russian friends exchange messages with us regularly via the Internet, and in 1999 the *Sixth Friendship Radiosports Games* and *First IARU Region II Amateur Radio Direction Finding Championships* in Portland, Oregon were attended by nearly 100 athletes and delegates from thirteen countries – with all international coordination having been accomplished via the Internet.

That dramatic change in the modalities of modern routine personal communications had the unfortunate effect of driving yet more nails into the yet-still-open coffin of NTS. Such renowned traffic handlers as Vic Seeberger W7VSE, who had "made BPL"[20] (by handling a minimum of 500 formal messages in a month via NTS) each and every month for several years, suddenly were unable to do so. The reason: traffic had largely "dried up;" the public was no longer enthralled by the prospect of being able to send a free message to anyone in the world via amateur radio "Radiogram," when the personal computer in the home provided an easy and convenient, time-shifting means of conducting such correspondence at any time, with greater privacy.

Hand in hand with this change in the public's enthusiasm for the "magic" of amateur radio third party communications, has come a general lack of awareness of the Amateur Service completely. This Commenter, as an ARES/RACES, CERT, WEMS,[21] SAR and Skywarn volunteer, and hobby "DX-er," maintains multiple-band amateur transceiving equipment in each of his vehicles. As late as the mid 1990s, members of the public would frequently approach this Commenter's vehicles upon noticing its many antennae, and strike up conversations with opening words such as *"Hey! You're a ham operator! How far can you talk from your car? Do you do Morse code from there, too?"* These days, the only two questions of this Commenter upon a non-amateur's glimpse of

---

[20] "Brass Pounders League" is an honor bestowed by ARRL upon the elite traffic handlers, its title being derived from the nickname affixed to radio operators who spend many long hours sending messages via Morse code, *i.e.*, "pounding brass." Those who "make BPL" are listed in ARRL's organ *QST* each month, and receive a special lapel pin for the achievement. Any transmission mode may be used. One hundred formal written messages originated, or an aggregate total in any combination, of 500 such messages originated, received, sent and/or delivered, handled via NTS in a single calendar month, qualifies one for the award.

[21] "WEMS" = Wilderness Emergency Medical Services.

the mobile "antenna farm," is either "WHY do you have all those antennas?" or *"What kind of cop are you?"* Responses referencing "ham radio" generally garner the reply "*Huh? What the H*** is 'ham radio?*" Not infrequently, however, the response obtained is *"What? You mean people STILL DO THAT? WHY? I can send my voice, text, pictures and video to anyone anywhere, with this little phone. Man, that's goofy. What do you need THAT STUFF for?"*

Both the Commission and other readers of these Comments are blessed with foreknowledge of "why we need that stuff." The very first consequence of a disaster which occurs (other than instantaneous injury and property destruction) is a *communications emergency*.

In Oregon City, for example, the entire PSTN converges at a single switch, the location of which is known to OCDS members but, it is hoped, not to those who wish the community ill. That site is vulnerable to destruction from flash flood, fire, earthquake, vandalism, terrorism and any other calamity or sequelae of such calamity, likely to occur.

As resilient as the Internet is, it remains vulnerable to crashing, not merely from natural disasters but from intentional sabotage perpetrated by "cyber-terrorists." The immediate utility of that medium will further be decimated by loss of commercial power mains, which would disable probably 90+% of the Internet-connected personal computers in the United States. Notebook computer batteries may be expected to power the computer for approximately two to four continuous hours. The detonation of a "small" nuclear device by a terror group would produce an electromagnetic pulse ("EMP") event which would trip power grid fusable links, destroy solid state electronic components and render computers, microprocessor-based devices, and most public service radio transceivers worthless for a variable zone surrounding ground zero, the radius of which is dependent upon elevation of the device at detonation, presence or absence of absorptive structures in the path of the EMP, inverse square of the distance of a potentially impacted electronic device from the detonation, and initial instantaneous amplitude of energy released at point of detonation. Many amateurs in such an EMP-affected zone would have as back-up equipment, EMP-resistant vacuum tube-based transceivers, together with portable electrical generation systems. Amateurs responding from outside the EMP-affected zone would bring with them modern solid state equipment which would be frequency agile and operable in the disaster environment.

Of course, even when all normal communications infrastructure remains intact, a communications emergency still *inevitably* results in any disaster situation. Though elementary, the reasons for this inevitability are nonetheless concisely enumerated:[22]

---

[22] As one firefighter posted on the "Firehouse Forum," http://forums.firehouse.com/showthread.php?s=c7bf06976b0aabda2f2e1d6cf0f

133ed&p=702891#post702891, an online forum for firefighters and EMTs provided to its subscribers by *Firehouse Magazine*:

> "...NexTel and Sprint are on totally different bands using totally a totally different algorithm. NexTel is 800MHz TDMA. Sprint is 1900 MHz CDMA. NexTel devices can not and do not share or roam onto sprint systems and vis-versa. The only thing common between the two *right now* is the name on your bill.
>
> "NexTel service is no more or less likely to succumb to the downfalls of other carriers during a major incident or disaster. The notion that they are somehow different and more stable is at best a marketing line and at worst a lie that so many people actually fall for. The two things that bring down any wireless carrier's ability to serve you in a disaster are system overload and infrastructure failure.
>
> "Overload is just that. Every tom dick and harry picks up their phone and calls everyone they know to talk about what is happening. It is just like on a landline when you get "All circuits are busy now". Any carrier that claims it won't happen is full of it. It happened on 9/11. It happened in the 2003 Blackout. It will happen the next time there is some catastrophe. Hell, everyone's NexTel around here took a total dump as soon as the ball dropped on new years this year. It wasn't working 2 hours later when I fell asleep but was working in the morning when I woke up. I don't know what the problem was exactly but it was a perfect shining example once again. Either way, this BS about using a different T1 is the lamest marketing line I've heard yet. A T1 that Nextel leases from the landline telephone provider to serve their site is no more or less likely to be overloaded than the one Verizon or Cingular or anyone else leases. There is nothing magical about them. I hate salesmen. Nextel allegedly gives system priority to emergency services. I haven't seen this work yet, it sure wasn't doing diddly on New Years. I put no reliance on that claim for emergency communications.
>
> "Infrastructure failure is the other cause. Once again, no carrier is immune to it and everyone is just as susceptible as the other. A severe storm can damage the site equipment and it doesn't care who made it and what carrier uses it. Once again, this line about "we use a different T-1 than the other carriers" is comical. Geez, I thought maybe Verizon just let NexTel use their T1 for the hell of it...You are suggesting that the T1 or whatever telco circuit that NexTel uses at a given site is somehow more magical than the other ones coming into the site for the other carriers? That is non-sense. There is no magical difference between a T1 that Verizon pays for versus a T1 that Nextel pays for. They all come into the site the same way and they can all be damaged the same way. Have I mentioned my dislike for salesmen

(1) Thousands of members of the public *will* – regardless of official pleas not to do so – immediately attempt to telephone 911 or family members, instantly overloading the PSTN;[23]

(2) Assuming that serviceable cellular telephone/PCS sites remain functional, those systems will likewise be instantly overloaded; in many localities, as few as six stationary cellular telephone users will "lockout" others from the system in the radius served by one tower. The "solution" relied upon by some jurisdictions – dialing a special cellular phone number which will cause one or two present users to be "dropped," thereby making way for an "official" call – is no solution at all, because; (A) there is no manner of knowing whether the "bumped" call was of higher priority than the one which has done the "bumping;" (B) as with any telephone, the device is designed to communicate with one person at a time; accordingly (C) if the official does not know the telephone number of the phone associated with the person with whom communication is sought, communication cannot be established;[24]

(3) There is no way to control the inflow and outflow of telephone calls by applying a form of triage to each call before it is made or received;

(4) It is not possible to obtain relays of data not understood due to chopped reception;

(5) It is not possible to address multiple persons at one instant, direct some of those persons to move to a different communications channel, exchange yet other data pertinent to a certain segment of those remaining on the first channel only, and so on, exercising information flow and routing control;

(6) Information received must be reconveyed separately to each individual requiring the information;

> yet? The failure can also originate with the landline telco since it is their circuits that feed the various tower sites. It can go out just like your landline can go out. I can go outside with a flathead axe and shutdown cell service for 5 seperate carriers in one shot across 2/3 of my town.
>
> "What it all boils down to is this. They are all commercial wireless carriers. Their goal is to make money. They are all equally susceptible to the same downfalls. None of them should be relied on for life-safety or mission-critical emergency communications."

[23] *See,* note 22, *supra.*

[24] *Id.*

(7) Trunked 800 MHz systems, despite manufacturers' sales pitches to the contrary, do not remain functional during many types of calamities (or even in normal times)[25] and even assuming that upon loss of its computer-controlled

---

[25] *See, e.g.*, "FHP's radio breakdowns minimize traffic stops," by Phil Long, *Miami Herald*, February 26, 2000:

> "The multimillion-dollar system that controls radio communications for the Florida Highway Patrol in South Florida went on the blink again Friday for the second time this week, prompting the agency once again to warn troopers not to put themselves in danger with unnecessary traffic stops.
>
> "Chicago-based Motorola, which maintains the equipment for the state, said it had assigned a team of top engineers to solve the problem, which has bedeviled FHP and several other agencies that use the system since Monday.
>
> "Some troopers said Friday that they are writing fewer tickets because they are concerned about their safety. The officers have been told not to make stops for minor infractions in case their radios don't work if a traffic stop turns dangerous.
>
> "A 16-year veteran trooper who usually writes 10 citations or so a day said on Friday he is stopping about a tenth of the cars he normally does. The radio problem ``puts a question in your mind: If I need help, is somebody going to answer me back?´´ said the trooper, who requested anonymity.
>
> ``We told troopers that whenever they experience problems with the radio, they are not to make any unnecessary stops,´´ said Lt. Ernie Duarte, spokesman for the Miami-Dade and Monroe units of the FHP. ``We can´t overstress how important it is to us to get the radio system back in working order so we can manage the everyday duties . . . like we used to before the problems occurred.´´
>
> WORKING ON IT
>
> "The problem -- cause still unknown -- comes after more than 2 1/2 years of trouble-free service, said Motorola spokeswoman Pat Sturmon. ``We are going to make a full investigation, report to our customer, and hopefully minimize the chance of something this serious happening again in the future,´´ Sturmon said. ``We are determined to fix the problem.´´
>
> "No communications system as large and complex and with as many features as the Florida state police radio system is immune from problems, Sturmon said. ``The key here for manufacturers like

trunking capability, each tower site were to default to its repeater mode, the frequency in question is line-of-sight only and, additionally, many users of the system would be on several different channels, without the ability to coordinate

---

Motorola is to deal with the issues, deal with them quickly.´´ Motorola's repair team will work on the system, which uses computers to route radio communications, until it's fixed, at no cost to the state, she said.

"As problems with computers mounted, the radio system had to be taken off line for periods of about five minutes to 20 minutes on Monday and Tuesday and twice on Friday. The system is designed to monitor and protect itself by going into backup mode when computers, or technicians, see problems that may lead to a more serious, unplanned shutdown.

"Computer difficulties in Miami and in Lake Worth triggered the switch to backup mode both in Miami-Dade and in Central Florida for brief periods Friday morning. In backup mode, which offers limited two-way communication between dispatchers and officers, technicians can make fixes and return the system to normal.

EXTENT UNCLEAR

"The scope of the overall problem is hard to gauge, Duarte said. The system as a whole was functioning normally since about noon Friday. But FHP supervisors had complaints from troopers that they have not been able to communicate with their dispatchers or each other.

"The Central and South Florida system is the first half of what will be a statewide police radio setup serving about 11,000 state police officers from Orlando to the Keys. The state has spent about $96 million on the system. If completed as now designed, it would cost upwards of $300 million. Gov. Jeb Bush is seeking proposals and legislative approval to privatize the system.

``It needs to be fixed. Four days with intermittent radio problems has put these people at risk,´´ said Miami FHP Cpl. Ed Hotaling, president of the FHP chapter of the Police Benevolent Association. Duarte said he won't know until next week how much ticket volume may have dropped because of the radio problem. On a normal day, about 350 troopers in South Florida write 564 tickets, 129 warnings and render assistance to 237 motorists. They also work about 125 crashes."

cross-communications. These problems have been discussed in detail in numerous pre- and post-*Katrina* reports.[26]

(8) Even if all of the foregoing were not to come to pass, nonetheless the multiplicity of agencies and individual responders attached to each of them will prevent the efficient intercommunication among those agencies due to inherent limitations in frequency agility.

When the term "communications interoperability" is thrown about, the image conjured by many who are not experienced in the milieu, is simply one of any individual communications device being able to communicate with any other communications device. Simply providing every agency with radios that covered a frequency range of "DC to daylight" would, under that conception of "interoperability," solve the problem, as would simply placing all agencies on the same channel. The latter, of course, is utterly ludicrous because only one transmission at a time could occur, requiring thousands of other immediately necessary transmissions to stand by. The former likewise is not a solution; it is important that this be clearly understood because typically *it is overlooked that the technical ability of one device to communicate with another is of little benefit without a well-designed system of dynamic message traffic coordination, routing and control.* In other words, the solution to communications interoperability is not, and cannot, be merely technical; rather, it is also human. Unfortunately, this omission even crept into the Independent Panel's report.[27]

This brings us full circle back to the issue at hand: the frequency-agile Amateur Service is fully technically capable of providing intercommunications

---

[26] The City of Portland's 800 MHz trunked public safety communications system has suffered numerous partial and complete failures in the absence of external calamity, which on several documented and journalistically reported occasions required police officers to receive dispatches from the 9-11 center via cellular telephone, and lasted for as long as 12 hours. It is not difficult to imagine the fatal delays inherent in dispatchers having to place multiple calls conveying the same information to several different public safety workers and mobile units concerning the same message, in the course of a disaster. The most recent failure of the Portland 800 MHz system of which this Commenter is aware, occurred for 30 minutes on March 28, 2000. In that incident, data/mobile display terminal functions continued to operate, but all two-way voice communications were lost.

[27] An indirect manifestation of this flawed reasoning is presented in the Independent Panel's report, which recommends coordination among private communications services providers, but with regard to means of implementing that recommendation, recites that states should *"be encouraged, but not required"* to mandate such cooperation or to provide proper credentialing and secure access within dedicated areas of Emergency Operations Centers to the technicians responding on behalf of those providers.

among multitudes of separate agencies and individuals simultaneously, but in order for that facility to be successfully utilized, the radio amateurs deploying the interoperability facility must be competent and fully trained in advance in the proper and efficient establishment, maintenance and control of the hydra-headed networks activated for that purpose by those responding radio amateurs, and in the appropriate operating procedures utilized on those networks.

The only means of *guaranteeing* that the *vast majority* of radio amateurs have at least a fundamental understanding of what is required, is to *"front load" that training and education into the requisites for obtaining amateur radio operating privileges*. The irrefutable statistics cited herein demonstrate conclusively that the purely voluntary model for attainment of such minimum EMCOM competence, is a failure because under that construct, 96% of licensed radio amateurs will be unprepared to execute the fundamental Amateur Service mission of providing emergency communications in a major disaster, let alone swiftly, efficiently, accurately and effectively establishing and maintaining multiple, smooth-flowing networks providing emergency services agency communications interoperability.

Ineluctably, therefore, the basis and purposes of the Amateur Service pursuant to § 97.1 are not being served by the current, purely voluntary system of EMCOM training, which fewer than 4% of licensees seriously undertake, for a variety of reasons.

The transition from Commission-proctored exams to the VE system, the ubiquity of license exam preparation books tailored to simple memorization of Question Pool answers, and the contemporary prevalence of "get your license in one day" examination preparation courses, has had the benefit of increasing the Amateur Service population, but has carried with it the undesirable side effect of producing licensees without the competency required in order to meet the mandate of § 97.1.[28]

---

[28] *See,* "White Paper: *What to Do When the Phone, Cellphone and Internet Fails in a Disaster?*" by Cliff Cheng, Ph.D., KI6CM, *Neighborhood Emergency Radio Project* http://nerp.myeweb.net , excerpts of which recite, in relevant parts (underlined emphasis in original; italicized emphasis added):

> "...While it is easy to get an entry level [amateur radio operator's] license, the serious responsibility of having the privilege to make radio frequency transmissions has not diminished. The ever increasing sophistication of the technology has only made the responsibility greater. *In times of emergency, the privilege of making transmissions is an extreme responsibility. Ham radio will be the only surviving network. Government networks will either be down or they will lack inoperability (people can not talk to each other if they are with different agencies). A[n].unskilled and inexperienced [ham] may sabotage the relief effort by tying up valuable frequencies or interfering with networks involved in the recovery.***"Merely getting a "one-day ham"*

license will not enable one to be... prepared for the failure of communications infrastructure... [In prior times] [radio amateurs] [were licensed] in an era when 2/3 of test applicants failed. Not only were the test questions and answers not published, it was a federal crime to divulge what was on the test. *** "***There also was ...an entry level license, called the Novice, which has since been eliminated. Experienced hams went out of their way to help Novices who had the...attitude that they wanted to learn. *Our research shows 37.9% (11) of respondent hams, all code-free Techs, complained that ham radio is "too hard," "too technical." Some even expressed contempt towards learning how a radio works.*

"Even if one takes a semester long licensing class...that class will not train to a skill level equal [to that which]...hams licensed in the 1970s and before were trained...[P]ublish[ing] test questions and answers...reduces competency...Most [examinees] pass by memorizing the answers...[*N*]*o responsible emergency management executive should fail to have legitimate concerns about post-1984 hams' ability to carry out ham radio's emergency communications purpose.*

"*...In a "Sample Neighborhood" in LA City, 55%... of respondents,* [mostly] *code-free Tech*[*nician Class licensees*]*..."did not know how to use their radio*[*s*]*"* [and]...wanted [their]ham radio[s] to be "[as] easy to use as a cell phone."...*Typically* [*respondents*]*...obtained an easy to get in one-day Tech license.* They bought a radio [but] were unable to program it. [Because] no one taught them how to use a radio, they signed up for a 'teach-to-the-test' class [which] [t]hey passed. [Viewing] a ham radio as an appliance, as some sort of cell phone, they never [attained] the technical aptitude [of] a competent and responsible radio amateur. ...[and]were not willing to...[do so]. [A] radio they spent $300 on sits in the drawer. Even if the ham store salesperson programmed it for them, leaving it in the drawer will likely result in a battery malfunction and forgetting how to use the radio. *Even if these problems were overcome, such a person will not know what frequencies to use. It is likely that if they got on a frequency being used for emergency operations, they will interfere with others. Remember in such a scenario, ham radio is the only means of communication left. ****

"...It is possible, but rare that someone will have the initiative to learn what [*is*] *need*[*ed*] *to...independently establish a communications link when the equipment and resources... need*[*ed*] *are destroyed, damaged and...need*[*ing*] *field repair.* The first step is to take a semester long licensing class...[which] is only a starting point....After [earning] a license...[one must] develop and maintain competency.

*"*** [The] Technician [Class license] as a solution to the problem of communicating after a major disaster...<u>should only be undertaken by</u>*

The problem of overall gentrification and decreasing numbers of licensees in the Amateur Service has been largely arrested by such methods as adoption of the "no code" Technician Class entry-level license, placement of license examination Question Pools (including correct answers) into the public domain, adoption of the Volunteer Examination program, availability of one-day cram courses in which nearly every attendee passes the Technician Class examination administered that same day at conclusion of the "course," and availability of free online sample examinations with instant online scoring. Similarly, the anticipated impending implementation by the Commission, in WT Docket 04-140, of the amendments to ITU regulations eliminating the Morse code proficiency requirement as a mandatory prerequisite for an administration's issuance of an Amateur Service license conferring HF operating privileges may be expected to result in a substantial shift in the license class demographics of the United States radio amateur population from the present overwhelmingly dominant "no-code" Technician license to much larger radio amateur sub-populations possessing General Class and Extra Class operating privileges.

Unfortunately, however, merely increasing the number of United States radio amateurs, and merely increasing the numbers of such amateurs possessing increased operating privileges, will do little if anything to address the problem of fewer than 4% of the overall United States Amateur Service licensee population lacking basic competence in delivery of emergency communications.[29]

> *those willing to develop and maintain the knowledge, skills and abilities required to be an effective emergency communicator. The Tech license test has been vastly watered down so it is no more difficult than a driver's license test. This solution is not just a personal one for yourself and your family... If you are a ham, you will be expected, but not required, by the government and relief agencies, Red Cross, Salvation Army, hospitals, and your neighbors….to assist in disaster recovery."*

[29] On the Home Page of his site, Dr. Cheng further observes, in relevant part (emphasis added):

> "***Historically, neighbors, the government and relief agencies have depended on amateur radio operators. Amateur radio is still a neighborhood's most valuable emergency communication resource! It is also the most valuable resource to the government and relief agencies as well. *The amateur radio service was established to provide a technically trained pool of radio technicians/operators whose talents can be utilized in times of disaster. In Los Angeles we are losing 870 hams a year to death and non-renewal. 2.5 hams each day become unavailable to help their neighbors and their city communicate after a major disaster which will force the communications infrastructure of LA to collapse!*

VIII.

Epilogue: Excerpt from *The Wayback Machine* —
http://www.twiar.org/aaarchives/WB035.txt

On March 27, 1980, smoke and ash began pouring from Mount St. Helens, a supposedly dormant volcano in southern Washington. Scientists were unsure if this was just a prelude to a major eruption, but they weren't going to take any chances. Monitoring stations, equipped with scientific instruments, were set up around the mountain. The Washington State Department of Emergency Services [DES] sprang into action. RACES was activated, and hundreds of amateur radio operators, through HF and VHF RACES and ARES nets, began helping the geologists and scientists. Hams acted as scientific observers, as well as communications operators from numerous remote locations, transmitting information on the volcanic tremors, as well as the amount of smoke and ash venting from the mountain. A few days after the March 27 activity, the mountain once again became somewhat dormant, and the amateur operations were scaled back.

Then suddenly, without warning, at 8:32 am on Sunday, May 18, 1980, Mount St. Helens literally blew up. The top 1300 feet of the mountain was blown apart by an explosion inside the mountain which had the force of a 10 megaton atomic bomb. Volcanic ash was thrown 60,000 feet into the air. The top part of the mountain came down the side of the volcano, crushing and destroying everything in its path for miles.

"*The answer is not more radio amateurs in and by itself. It takes several years to train a ham who can independently establish a communications link in an emergency. Beyond this it, takes weekly check-in drills, continuing education and a weekend long yearly drill to maintain proficiency. This fact has not been taken into account by misguided policy makers who have steadily reduced licensing requirements.* In 1984, the Federal Communications Commission (FCC) started publishing both the questions and answers to its amateur radio licensing examinations. *Not only is it possible, most people pass licensing tests by memorizing the questions and answers. Prior to this point, about 1/3 of license applicants passed their tests. ****"

Over 10 miles away, Jerry Martin, W6TQF, was at his observation post, “Coldwater 2". He was the first to see the explosion, and he transmitted the first warnings, which activated the state DES. Ominously, contact with W6TQF was lost just a few minutes after his warning. More ominously, no one had heard from Reid Blackburn, KA7AMF, who was much closer to the volcano. He had been killed by the hot volcanic ash that buried his location. As for W6TQF, his observation post was destroyed by the explosion, ash and mudflows.

Meanwhile, a massive cloud of volcanic ash from the eruption began drifting towards populated areas, raining ash and lightning in an ever increasing path. Amateur radio nets on 147.06, 3.987, and 3.940 MHz relayed wind direction and ash-fall information to towns in the cloud’s path. Amateur Radio became the key communications link during the next few days, as the first cloud eventually drifted to the East Coast. But it wasn’t over. Exactly one week later, at 2:49 AM, on Sunday, May 25, 1980, Mount St. Helens erupted again. This time the ash drifted northwest, towards the ocean beaches. Hundreds of Memorial Day vacationers evacuated to escape the ash fallout. Amateur Radio operators kept the Washington State DES headquarters informed of the mountain’s actions. Hams also kept County emergency services offices informed about the path of the second ash cloud. Local officials used the amateur radio data to plan evacuations, or other necessary activities. But it still wasn’t over. On Thursday, June 12, 1980, at 9:11 PM, Mount St. Helens erupted for a third time. This time, the ash drifted southwest over Portland, Oregon, closing the airport. Again, Amateur Radio operators provided information regarding the eruption and the path of the ash cloud. In the end, over 300 hams were active, passing reports, mountain observations, and data to emergency service offices around the state. Almost 3000 messages were passed via Amateur Radio.

And let us never forget that two Amateur Radio operators, Jerry Martin, W6TQF, and Reid Blackburn, KA7AMF, made the ultimate sacrifice in providing public service to their fellow man... (*Information for this article was obtained from the July and August, 1980, issues of QST*).

IX

Conclusion

For the foregoing reasons, the Commission should implement the proposals contained in these *Comments*, without undue delay.

DATED this 3rd day of August, 2006:

/s/
J. Kevin Hunt, Esq. (WA7VTD)*
Oregon City, Oregon

for himself and Oregon City Disaster Services

** Attorney at Law*

PMB No. 167
19093 S. Beavercreek Rd.
Oregon City, OR 97045

Tel. (503) 650-7782
Fax (503) 655-8900

Email: wa7vtd@arrl.net